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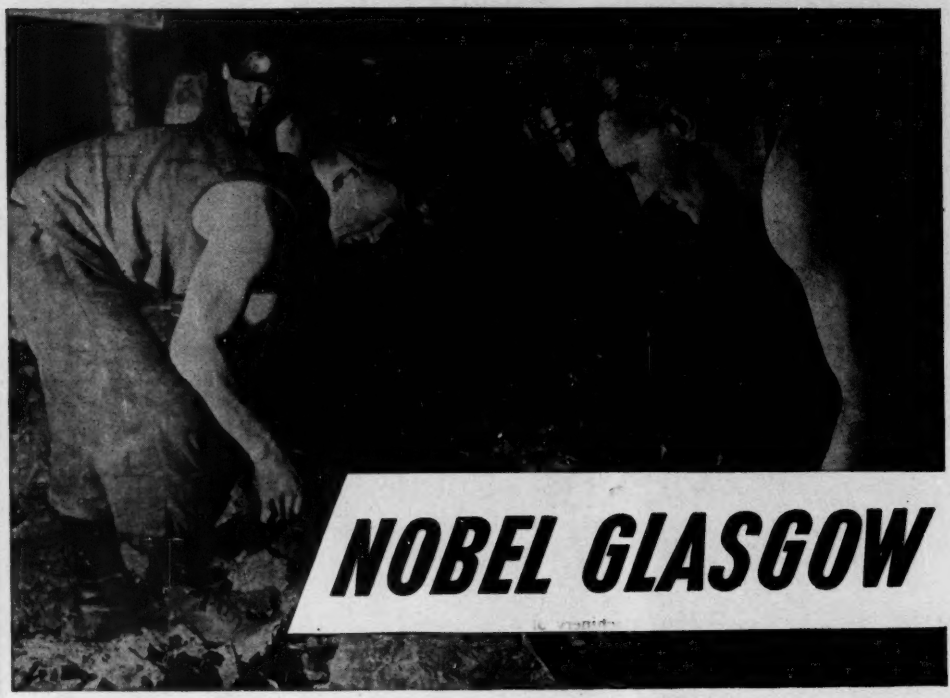

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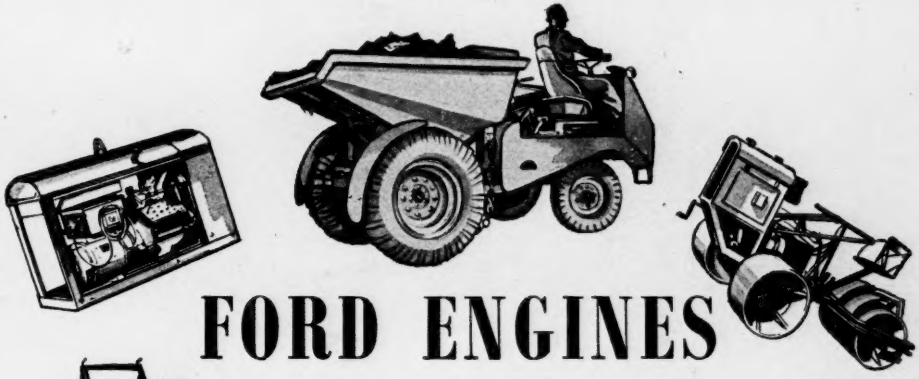

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THIS WEEK'S FEATURES

STANDARDIZATION IN THE MINING INDUSTRY - - - Page 553
THE WORLD LEAD SITUATION Page 554

NOTES AND COMMENTS

Cyprus Mining in 1950

As recently recorded in our issue of February 23 last, Cyprus mines enoyed a bumper year in 1950, and the Annual Report of the Inspector of Mines, Mr. Parry James, enables us to fill in many details. For the fourth successive year, the value of minerals exported has risen, last year to £5,451,021, which was an increase of £1,775,031 on the figures of 1949. While the immensely increased prices obtainable were mainly responsible for this outstanding gain, a tonnage record was secured for cupreous iron pyrites, asbestos, chromite and gypsum. The mineral industry has contributed most of the improvement which Cyprus trade returns show and accounted for 49 per cent of the total value of the exports. There were no labour disputes and labour seeking employment was more than adequate for the industry's needs. However, the cost of living is again advancing, involving a general increase in wage rates.

The chief contributor to the value of the mineral won during the year was copper concentrates, which totalled 103,030 tons, valued at £2,120,200. In addition, 1,334 tons of cement copper was recovered. Iron pyrites to a total a 533,501 tons, valued at just over £1,500,000, was obtained, together with 15,471 tons of asbestos, valued at £737,912, and 18,150 tons of chromite, valued at £215,260. The gypsum output made a notable gain with a total of 62,558 tons, which included 9,464 tons of plaster of Paris; this compared with 23,979 tons in 1949, which was the previous record figure. Although this figure was surpassed in 1939, the mined shows a very big recovery from the total of the intervening years.

Highly satisfactory as these returns are, it must be borne in mind that Cyprus is a small island and exploratory development last year yielded nothing fresh in the way of discoveries of economic importance, beyond the location by the Cyprus Sulphur & Copper Co. of a zinc bearing copper pyrite ore body in their Limni lease. In particular, the life of the Cyprus Chrome Co. seems likely to be short. Importance, therefore, attaches to the grant, by the Colonial Development and Welfare Fund, under which two geologists have started to make a detailed geological survey of the island.

The Cyprus Mines Corporation, working the Mavrovouni Mine, continues to be the most important producer, though the tonnage mined—625,535 tons—was about 100,000 tons down to correspond more closely with the rate of export. The concentrating plant at Zeros produced 78,680 tons of copper concentrates, averaging 18.8 per Cu., 970 tons of cement copper, averaging 57.8 per cent Cu., and 329,578 tons of flotation pyrites, running 49.9 per cent S. Besides this, 121,415 tons of cupreous pyrites was stockpiled for direct shipment. Plans for the new leaching plant, estimated to cost £500,000 were completed and the plant was due to come into operation early this year. Actual shipments of flotation of pyrites were 363,435 tons, somewhat exceeding the recovery in the concentrating plant. The Skouriotissa and Mathiati Mines remained closed during the year and churn-drilling to investigate an anomaly at the Apliki mine failed to find any ore.

The Hellenic Mining Co. continued the second most important producer, but here again the output of pyrites was less than in 1941—191,245 tons compared with 203,935 tons. In view of the diminishing ore reserves and the increasing amount of impure pyrites in the ore stoped, intensive efforts were made to locate new ore bodies, but no intersections of value were reported. The iron pyrites ore body in the Sha section of the Kambia-Sha lease, in the foot-hills some 30 miles to the north-east of Kalavasos, was practically ready for operation at the end of the year. The Hellenic Mining Co.'s subsidiary, the Gypsum & Plasterboard Co., got into full producton and exported 50,094 tons of raw gypsum and was mainly responsible for the great increase in shipments.

The Cyprus Asbestos Mines Ltd. had a record year, quarrying 1,386,050 tons of rock and producing 14,752 tons of fibre, with exports of 15,471 tons. The company has installed a new power unit in the shape of a 1,450 b.h.p. Mirrlees Diesel engine which promises a bigger tonnage in the present year.

The Cyprus Chrome Co. had the best year in its history and was able to mine through the year. It produced 23,662 tons of ore and exported 18,150 tons of lump ore and concentrates, all to Germany. However, ore reserves are being rapidly depleted, and during the year preparations were made to deepen the main shaft from 300 to 400 ft. at which a new level is to be developed.

The Cyprus Sulphur & Copper Co. resumed churn drilling on its Limni concession and estimates its ore reserves now at 5,714,400 tons. In addition, drilling on the Kinosa section disclosed a body of zinc-bearing copper pyrites, but the full importance of the discovery cannot, Mr. James states, be assessed until further exploratory work has been done, adding that no large scale activities can be expected until additional capital is available.

International Team's Tour of U.S. Ore Dressing Plants

An international team, comprising experts from Belgium, France, Germany, Norway and the United Kingdom recently completed an 8,000 mile tour of United States ore dressing plants, which was sponsored by the O.E.E.C., and the Economic Co-operation Administration. Several members of this team, which has, in the words of the French members, derived "invaluable benefits" from their study of U.S. plant, have epitomized their impressions at Press interviews in Washington, leaving no doubt regarding the high technical standard obtaining in this important field of U.S. industry. While it is inevitable that each national group in this team should have studied U.S. developments in ore dressing with special reference to their own problems, there is general agreement as regards the use of automatic controls to cut labour costs and to obtain steadier quality control in processed ores.

Belgium's position as a producer of finished goods for the markets of Western Europe could be greatly improved by techniques learned in the U.S. Electro-static separation of ores could be more widely applied in Belgian ore dressing plants, according to M. Pierre Van Beirs, manager of ore dressing and coal flotation for the Société Générale des Minerais, Brussels. "In thinking of these adaptations, and many other detailed improvements we have noted in U.S. plants, we must break away from the tendency to stick to old methods," M. Van Beirs said.

As an example of American use of available improvements, he noted that he had seen in many U.S. ore-processing plants a device developed in the Netherlands. "This idea came from Europe," he said, "but I believe it was taken up more quickly and is more widely used in the U.S. than in Western European plants."

Selection grinding of ores in order to reject "tailings" or waste at the earliest possible stage of ore dressing was an important economy in U.S. plants, according to Norwegian members of the team. Mr. Liev K. Sundelin, mill superintendent, A/S Titania, Dalane, said "The U.S. methods of selective grinding are far ahead of other countries . . . we can adopt many of these methods to existing plants in Norway with a minimum expenditure for new machinery."

Recovery of titanium may be increased in the U.K. by use of U.S. electrostatic separation processes. Mr. Francis B. Michell, head of the Department of Mineral Dressing at Camborne School of Mines, and leader of the team, pointed out that titanium recovered from ore processing methods in some U.K. mines was at present too expensive to justify shipment overland by rail and water to the plants where it could be used.

Taxation in the Diamond Industry.

Sir Ernest Oppenheimer, speaking at the annual general meeting of De Beers Consolidated Mines earlier this week said that the sales for both gem and industrial diamonds during the first five months of the current year were at an even higher level than the corresponding period last year when the record level of £51,000,000 was reached.

However, Sir Ernest's speech was mainly concerned with the crushing burden of taxation imposed on the Union's diamond producers—a burden far greater than the industry can bear in normal times. If it is continued, he added, during times when the present boom conditions no longer prevail, the burden would render a mine like Koffiefontein in the O.F.S. as " too rich to ignore and too poor to work." Sir Ernest expressed the hope that the present incidence of taxation was temporary and that the report of the Income Tax Enquiry Committee would bring about changes in the taxation code more favourable to the diamond industry.

Brazil

(By Our Own Correspondent)

Teresopolis, May 16.

The international situation, by increasing the demand for raw materials and threatening to curtail imports, has stimulated interest in mining and the industrialization of mineral products in Brazil.

In January, a National Research Council was created, with an initial grant of £600,000, to study local mineral resources. A conference, held at S. Paulo in April, considered the world shortage of non-ferrous metals and its probable repercussions on Brazil's industry, which depends almost entirely on foreign supplies. More recently, the National Economy Council met representatives of thirty metallurgical companies to discuss measures for increasing iron and steel production and the industrialization of non-ferrous metals.

Local steel production will be raised from 500,000 to 750,000 tons in 1952, by which time consumption is expected to exceed 1,000,000 tons. Expansion is hampered by an inadequate transport service. Operations have been slowed down because raw materials have not arrived over the Central Brazil Railway. This situation has led to the revival of the project for a new port at Itacurussá (see *M.J.*, 24/9/49).

NON-FERROUS METALS

The following paragraphs give details about the more important metals:

Lead.—Production, which is about 2,500 tons annually, could be raised to 7,500 tons within twelve months by opening up and equipping the mines in the Ribeira district of S. Paulo and north-east Paraná. This zone contains Brazil's most valuable known deposits and could, within a few years, supply the needs of the domestic market, which now amount to about 22,000 tons annually.

Tin.—Cassiterite occurs in seven Brazilian States, the best known deposits being in Minas Geraes, where a number of small companies are operating with primitive installations. Production of tin is around 170 tons, but annual consumption is 1,800 tons, and the industry will have to be re-organized on an economical basis before the output can be increased to any appreciable extent.

Copper.—Deposits have not yet been thoroughly investigated and there is no refining industry, due partly to the lack of electrical power. The largest known reserves are in the Camaqua-Serval district of Rio Grande do Sul, at Itapeva, S. Paulo, and in North Bahia, and are calculated, respectively, at 800,000 (3 per cent), 300,000 (oxidized, 4 per cent), and 1,000,000 (oxidized, 1.5 per cent). Exports of ore ceased after the war, while imports of electrolytic copper have risen to 18,000 tons annually. The question of fuller utilization of local deposits and of the establishment of a national industry is receiving the Government's attention.

Aluminium.—Brazil possesses abundant reserves of bauxite (*M.J.*, 12/5/50), demand for aluminium is growing rapidly and conditions are favourable for developing an industry which will meet local needs. The Ouro Preto works are being re-built to produce 3,000 tons annually, and the Companhia Brasileira de Aluminio is installing plant with an annual capacity for 7,000 tons of ingots.

Nickel.—Immense reserves exist in Goias, but transportation costs preclude export at present prices and domestic consumption is still too small to justify industrialization. In 1950, a Canadian company obtained a concession to exploit part of the deposits at S. José de Tocantins, where the Companhia Niquel de Tocantins, an associate of American Smelting & Refining, has been operating for some years. Reserves in this district alone are estimated at 10,000,000 tons.

Standardization in the Mining Industry

Fifty years ago, *The Times* published a letter from a London iron and steel merchant, Mr. H. J. Skelton, who drew attention to the difficulties and waste involved in handling a large range of types and sizes of iron and steel sections, many of which differed insignificantly from each other. Enormous benefits, it was pointed out, could be achieved by reducing the unlimited variety of sections to a carefully framed list of agreed standards covering all requirements. This suggestion met with a very favourable reception and was vigorously supported by the famous engineer, Sir John Wolfe Barry, K.C.B., then President of the Institution of Civil Engineers. A meeting was held in February, 1901, which resulted in the formation of an Engineering Standards Committee.

Thus originated the British Standards Institution, whose Golden Jubilee—to which reference was made in an editorial note which appeared in the May 18 issue of *The Mining Journal*—is being celebrated by an exhibition, held at the Science Museum, South Kensington, London, from June 18 to 30, at which the benefits of standards, standardization and simplification will be shown. The international affiliations and influence of this great British Institution will be marked by the presence of the Presidents and Directors of the national standards bodies of more than thirty Commonwealth and foreign countries.

As originally formed, the Engineering Standards Committee represented the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Iron and Steel Institute, and the Institution of Naval Architects. Its scope was confined entirely to steel sections for construction and similar purposes, and its first achievement was the reduction in the number of sizes of structural steel sections from 175 to 113, which adequately covered requirements in all fields. Examination of other engineering products followed, with equally striking results. For example, tramway rails, previously of all types and sizes, were reduced, by agreement between makers, users and professional bodies concerned, from 75 to 5 principal types. Similarly, some 3,000 separate types of colliery-tub wheels were reduced to 17, mining being thus among the first industries to benefit from the application of standardization. It was estimated at the time that these initial achievements in standardization saved something like £1,000,000 a year in production costs alone.

GENERAL ADOPTION

The principle quickly spread throughout the engineering industries, leading to the general adoption of agreed standards of dimension, quality and function, which ensured satisfaction to the user, and gave substantial economies in production, stocking and distribution. As time went on, the benefits resulting from intelligent standardization in the engineering field were so obvious that other industries began to ask for standards.

To-day, the British Standards Institution, with its scope formally embodied in a Royal Charter, serves four main industrial groups—Engineering, Chemical, Building and Textiles—with sectional committees to cover special fields. The work of standardization is carried out mainly by Industry Standards Committees, each one representative of the manufacturers, distributors, users and professional bodies associated with that particular industry. The Institution is entirely a voluntary body, formed and maintained by industry with the co-operation and support of the British Government. Its success is ascribed in the first place to the procedure adopted, which ensures that only standardization demanded by both producers and users is carried out. Another important factor is that standards are prepared by agreement and accepted by all the interests concerned, so that they are assured of general adoption.

It is impossible to hazard even a rough guess as to the financial benefits which standardization has brought to the mining industry, but the savings effected must be equivalent to a very large reduction in working costs. Scarcely less important are the far-reaching effects of British standard specifications on the quality and safety of mining equipment. Standardization has become integrated with every aspect of mining practice, from the winning of coal to glassware and instruments used in mine laboratories.

A handbook of British standards for lifting tackle includes 21 standards for fibre and wire ropes, chains and terminal fittings, together with extracts from other standards relating to the materials from which the fittings are made. A number of standards control installation and maintenance of flameproof and intrinsically-safe electrical equipment, the flameproof enclosure of electrical apparatus, and the specifications of mining-type transformers, flameproof electric motors for mine use, air-break switches and circuit-breakers (including flameproof types), cable-glands and sealing boxes, flexible trailing cables for mines and quarries, etc. Transport and conveying, and illumination and lighting fittings for underground use are covered by standards.

Maximum protection for the miner is afforded by standards governing his safety helmet, the flexible cord for his lamp, his protective boots, and the goggles worn for protection against flying particles.

STANDARDS FOR MINING EQUIPMENT

Standardization of equipment required specifically for mining purposes is carried out mainly by a Colliery Requisite Industry Standards Committee, set up by the Engineering Division of the B.S.I. Under this committee are a number of technical committees, responsible for the preparation of particular groups of standards. Many of these standards, of course, concern not only collieries, but also mines and quarries.

Apart from its own specialized requirements, the mining industry purchases an almost unlimited variety of stores and equipment which are also used by other industries. Both the National Coal Board and the manufacturers of mining requisites are, therefore, represented on many committees which are not solely concerned with mining. For instance, mechanical conveyors require rubber belting, which is handled by the Rubber Committees, while electrical equipment for both surface and underground use includes many items in general industrial use. Thus, virtually every component of every machine or structure used in mining is made from material specified by the B.S.I. and is frequently constructed in accordance with other British standards.

It is evident that any industry as large as mining must inevitably become interested in most of the work of the British Standards Institution, either as a manufacturer or as a user. The testing and description of fuels, for example, is becoming increasingly important to domestic and industrial consumers alike. Without standard testing methods, there could be no exact means of comparing the figures obtained by analysts in areas so widely separated as Newcastle and Swansea or Motherwell. A comprehensive series of standards has, therefore, been issued to unify the sampling and analysis of coal and coke.

There are now some 35 overseas countries having their own standards bodies, most of which operate on similar lines to the B.S.I. It can be stated, however, that mining equipment made by British manufacturers to British standards is of such a quality that it meets the conditions required by overseas countries and is readily accepted by customers abroad.

The World Lead Situation

By R. L. WILCOX

Since a thorough knowledge of the world market position is essential when dealing with a strategic commodity such as lead, special significance attaches to the following article, which is based on a paper read by the author—who is Chief of the Non-Ferrous Metals Branch of the Economic Co-Operation Administration—before the 23rd Annual Meeting of the Lead Industries Association, held at New York on May 17 and 18.

Several important facts will be noted from the summary presented in the table below, which contains figures on the world production and consumption of lead in 1950 (exclusive of Russia and her satellites), with similar data for 1948, 1949 and the 1935/38 average. These figures, obtained and compiled by the E.C.A., represent the result of over three years' intimate association with the problems of producing, consuming, importing and exporting lead. Coverage has been extended and greater attention has been paid to the use of scrap and other secondary materials as a source of lead in addition to ores and concentrates by the smelters.

All figures are in metric tons.

World smelter production in 1950, though slightly surpassing the peak attained during World War II failed to meet total demand with an indicated reduction in world stocks of about 48,000 tons. This was in contrast with 1949, when smelter production exceeded demand, with a subsequent increase in world stocks of pig lead available for consumption of about 133,000 tons. A check on pig lead stocks available for consumption in the hands of producers throughout the world at the beginning and end of 1950 disclosed that stocks were actually reduced by somewhat more than the amount indicated and that remaining stocks represent a minimum working inventory with little or no further reduction possible.

*World Production and Consumption of Primary Lead**
(In thousands of metric tons)

Year	Consumption	Production	
		Mine	Smelter
1935/38	1,383	1,405	1,360
1948.....	1,327	1,282	1,365
1949.....	1,185	1,347	1,510
1950.....	1,567	1,466	1,674

* Excluding U.S.S.R. and her satellites

The reason for this is that U.S. apparent consumption of primary lead in 1950—determined by production plus imports, less exports with adjustment for net stock change and other factors—does not include lead imported in 1949 for warehouse account and withdrawn for consumption in 1950. Therefore, 1949 U.S. primary consumption was overstated and 1950 U.S. primary consumption was understated by at least an estimated 20,000 to 30,000 tons. As a result, total world consumption in 1950 is understated by at least this tonnage so that the actual reduction in world stocks of pig lead available for consumption in 1950 must have been substantially more than that indicated or disclosed by an actual check on producers' stocks.

PRICE DEVELOPMENTS

The world market reflected the easy supply position in 1949 and the price of lead, common grade, N.Y. basis, declined from 21.50c. per lb. on January 1 to 12.00c. per lb. at the close of the year. The world market also reflected the short supply position in 1950 and despite a series of slight adjustments during the first half of the year, the price of lead (same basis) reached a price of 17.00c. per lb. on October 31. This U.S. price was still maintained at December 31. During the period October 31-December 31, 1950, when the U.S. price was maintained at 17.00c. per lb., European and other quotations for equivalent grade pig lead were considerably higher so that the U.S. price failed to reflect true world demand.

World mine production in 1950, under the stimulus of increasing prices, showed a substantial improvement of about 119,000 tons of recoverable lead (or 8.8 per cent) over 1949. However, even this failed to satisfy smelter demand in 1950 and world smelter production was only obtained by a reduction in world stocks of mine product of about 65,000 tons in terms of recoverable lead.

Last year marked the third consecutive year in which world stocks of mine product were reduced with a total indicated reduction during the three-year period 1948-1950 of about 106,000 tons of recoverable lead. While statistics relating to world stocks of mine product are not published, a cursory check of world stocks of mine product in the hands of producers and others disclosed that stocks did in fact decrease to about the extent indicated.

In view of the facts outlined above, the world lead situation in 1950 may be summarized by saying that both mine and smelter production failed to keep pace with total demand and that requirements were met only by significant reductions in stock of both pig and mine product with stocks remaining in producers' hands representing a minimum working inventory.

THE OUTLOOK FOR 1951

The immediate outlook for 1951 would indicate a continued high demand for lead, with some increased pressure for a higher world market price. However, any substantial favourable or unfavourable development in the Far East or in Europe would influence the situation.

Regardless of the viewpoint taken, the immediate statistical position of the lead industry throughout the world would indicate that any price adjustment in the near future could not be of great magnitude.

United States
(In thousands of metric tons)

Year	Consumption	Production	
		Mine	Smelter
1935/38	414	349	353
1948.....	665	355	465
1949.....	520	367	490
1950.....	797	392	520

Under the stimulus of high demand and increasing prices, U.S. mine and smelter production in 1950 increased slightly over 1949, but still failed to satisfy demand by substantial margins with indicated net import requirements of 277,000 tons of pig lead and 128,000 tons of recoverable lead in ores and concentrates.

However, the data for 1950 as well as those for 1948 and 1949 must be considered in the light of certain additional information, *viz.*: (i) About 2,000, 143,000 and 105,000 tons of smelter production in 1948, 1949 and 1950, respectively, were for special account and not available for consumption; (ii) Mine production in 1948, 1949, and 1950, was augmented by about 30,000, 55,000, and 40,000 tons respectively, of recoverable lead in the form of scrap and other secondary materials.

To summarize, the current U.S. lead position emphasizes—as was also the case in 1949—the need for increased domestic mine production to maintain smelter operations at the current level and minimize dependence upon imports of ores and concentrates. It is true that under the stimulus of the present and foreseeable future, favourable price for lead, U.S. mine production, should increase in 1951 by an estimated 20,000 to 25,000 tons

of recoverable lead. However, this increase will be needed to maintain smelter production achieved in 1950 and to offset substantial expected reductions in total imports of pig lead, lead ores and concentrates in 1951.

The main reasons for the expected decrease in U.S. imports of lead in 1951 are: (i) That the high rate of imports obtained in 1950 was achieved only as the result of substantial reductions in foreign producers' stocks, which are now at a minimum and (ii) The fact that the U.S. price is considerably below prices in other markets.

Mexico
(In thousands of metric tons)

Year	Consumption	Production Mine*	Smelter
1935/38	Neg.	225	220
1948.....	7	196	193
1949.....	8	210	204
1950.....	10	237	245

*Recoverable basis.

In 1950, Mexico slightly improved its position with indicated exports of 235,000 tons of pig lead. In fact, the 1950 production rate for both mine and smelter exceeded the pre-war rate for the first time in the last twelve years. Barring any major adverse development, Mexico should have little difficulty in maintaining its current position over the next few years.

Canada
(In thousands of metric tons)

Year	Consumption	Production Mine*	Smelter
1935/38	20	207	169
1948.....	56	172	145
1949.....	48	145	145
1950.....	51	154	154

*Recoverable basis. Includes production from Newfoundland.

In 1950 Canada continued its net export position on lead metal with indicated exports of 103,000 tons against actual exports of 104,500 tons. While statistics indicate no exports of lead in the form of ores and concentrates in either 1949 or 1950, actual exports amounted to 18,000 and 17,500 tons of recoverable lead, respectively, presumably from stocks. Mine production in 1951 is not expected to be much different from that of 1950, but smelter production is definitely expected to be off slightly from the 1950 rate.

Western Europe
(In thousands of metric tons)

Year	Consumption	Production Mine*	Smelter
1935/38	744	245	319
1948.....	462	145	243
1949.....	454	181	337
1950.....	538	208	385

*Recoverable basis.

The current position of the Western European countries and their overseas territories as a group shows that while consumption and mine production in 1950 are still lagging behind pre-war, smelter production exceeded the pre-war figure by a considerable margin.

These countries were successful in increasing smelter production in the past few years largely through their ability to obtain lead in the form of scrap to augment imports of concentrates. However, reports indicate that the supply of scrap is rapidly being depleted and that greater dependence will have to be placed upon imports of lead in the form of ores and concentrates.

In 1951, mine production of lead in this group of countries and their overseas territories is expected to increase by about 32,000 tons of recoverable metal with the major increase expected in French Africa. However, even with this increased mine production it will still have to import concentrates at least at the 1950 rate to maintain smelter production and to offset the expected reduced availability of scrap.

REVIEWS

Bulletin of the Geological Survey of Great Britain *No. 3, 1951. H.M.S.O. Price 4s. 6d. net.*

This *Bulletin* is devoted entirely to research work on uranium ores carried out by the Atomic Energy Division of the Survey, under the supervision of Dr. C. F. Davidson, and is, therefore, of special value to geologists and mining men.

A paper by C. F. Davidson and S. H. U. Bowie, entitled "On thucholite and related hydrocarbon-uraninite complexes, with a note on the origin of the Witwatersrand gold ores," gives the first technical description of the uranium ores of the Rand goldfields, which have recently been the subject of a supply agreement between the British, American and South African Governments.

These uranium deposits, stated to be the most important discovery of radioactive ore made since the atomic bomb, were first recognized and evaluated in 1945 in a joint investigation by Professor G. W. Bain, of Amherst College (then Geological Consultant to the American atomic energy project), and by Dr. Davidson, Chief Geologist to the comparable British organization. There tends to be a sympathetic variation between the gold and uranium values in these ores and the two metals clearly belong to the same general period of mineralization. Strong evidence is brought forward that the uranium is of hydrothermal origin, and it is suggested that current ideas on the placer nature of the South African gold should, therefore, be revised. The gold-uraninite mineralization is accompanied by the coal-like hydrocarbon "thucholite," which has originated by the polymerization of hydrocarbon gases under the influence of radiation from the uranium mineral. Similar uraninite-bearing thucholite has been recognized in specimen amounts from lode deposits and pegmatites in many other parts of the world, notably from the uranium lodes of the Goldfields district, Lake Athabaska, Canada; from the copper deposits of Moonta in South Australia and from the Laxey lead-zinc mine, Isle of Man.

Other papers in the *Bulletin* comprise a comprehensive discussion by J. E. T. Horne, on the phenomenon of fluorescence and other forms of photoluminescence in natural and artificial minerals, special reference being made to the uranium-bearing species; a review by S. H. U. Bowie on the applications of autoradiographic techniques in mineralogical and geological research and a report by C. O. Harvey on chemical methods for the determination of small amounts of uranium in minerals and rocks.

Review of International Commodity Problems, 1950. *—Prepared by the United Nations Interim Co-ordination Committee for International Commodity Arrangements. Pp. viii + 63. Obtainable from H.M.S.O. Price 5s.*

This Review emphasizes the wide fluctuations in commodity prices in recent years and illustrates the rapid rise in prices of certain commodities during late 1950 and refers to the interest of both producers and consumers in preventing or alleviating difficulties in connection with international trade in a particular commodity.

The activities, during 1950, of various intergovernmental organizations in the commodity field are summarized and the circumstances leading to the U.N. Tin Conference held in Geneva in late 1950 are summarized and the final resolutions of the Conference are given.

Summaries of trends in 22 commodities, including aluminium, cement, coal, copper, iron and steel, lead, petroleum, rubber, tin and zinc are given up to the end of 1950. There are many valuable tables, showing the direction of international trade in these commodities as well as some analyses of prices and stocks. A particular feature of this Review are the charts illustrating both monthly and daily price changes.

Anglo American Corporation of South Africa, Ltd.

Dynamic Management Builds an Empire

The dynamic and realistic policy pursued by the Anglo American Corporation of South Africa since its formation in 1917, has played a principal part in developing the South African mining industry as well as materially assisting the Union to expand its financial, economic and industrial activities. Although the Corporation is usually associated primarily with gold mining in South Africa, the vast and varied spread of interests which it has built up over the past 33 years has brought within its compass diamonds, copper, coal, industrial enterprises and real estate. For the smooth functioning of this empire, the Corporation has assets of over £20,000,000 and reserves of over £13,000,000.

Through its control of Anglo American Investment Trust, which was formed in 1936, it has substantial interests in all the principal South African diamond mines. The Trust holds 3,108,343 Deferred shares of De Beers Consolidated Mines out of a total of 16,008,812 shares issued, equivalent to a holding of 19.4 per cent. In a similar manner Anglo American is vitally interested in the operation of the mines on the Northern Rhodesian Copperbelt through its control of Rhodesian Anglo American, which in turn controls the Rhokana Corporation. Anglo American has also large shareholdings in Nchanga and Mufulira.

Coal has also come within the ambit of the Corporation's varied spread of interests, and these are held through associated companies, African & European Investment Co. and the Vereeniging Estates. During 1950 these companies, together with their subsidiaries, contributed over 40 per cent of the total Union production. During 1950 the Corporation acquired a controlling interest over Lubimbi Coal Areas, a new high-grade coal field discovered 150 miles north of Bulawayo. An intensive boring programme has been commenced with a view to proving tonnage and reserves and quality, so that the question of opening a colliery may be considered.

While the participation of Anglo American in industrial and real estate undertakings constitutes only a small proportion of its investments, they are far from being insignificant, and include the First Electric Corporation of South Africa, African Cables and Hard Metals, Ltd.

During 1950 the Corporation made a net profit after tax of £2,339,780 compared with £2,885,896 in the previous year. However, this latter figure includes approximately £1,000,000 received from the sale of the Corporation's Springbok Colliery. The year's dividend has been repeated at 6s. per share, part of which has been payable on a larger capital, which was increased when the Corporation offered at the beginning of the year 567,227 new 10s. Ordinary shares to shareholders at £6 10s. each in the ratio of one new for every ten held. The balance sheet reflects the powerful and well chosen portfolio, the book value of its investments being recorded at £15,784,997, while the market value of these investments was nearly double at £30,522,968.

Before turning to the Corporation's gold mining interests in South Africa, some mention must be made of its endeavours to inform shareholders about the nature and extent of the business which they own. Earlier this year, Anglo American presented an exhibition in London and showed by the use of well chosen illustrations, the work now being carried out in the Orange Free State. This step has now been followed by the launching of a quarterly review called *Optima* which will enable shareholders to become more conversant with the many technical problems to be solved in the mining industry, and the complexity of the organization required to deal with them.

ANGLO AMERICAN'S RAND INTERESTS

In the Far Western Rand the Corporation has undertaken deep level prospecting and for this purpose the Western Ultra-Deep Levels has been formed to explore the reefs beyond the deep level boundaries of West Driefontein and Blyvooruitzicht. Although some very satisfactory reef intersections have been disclosed, further exploitation remains dependent upon the solving of the technical and economic problems of mining as deep as 9-10,000 ft.

In the Klerksdorp district the Corporation also controls Vaal Reefs Exploration and Mining, which adjoins the property of Western Reefs. Shaft sinking is nearly completed and it is expected that development will commence during the latter part of next year.

On the far Eastern section of the Rand, Anglo American has some of the most successful gold-mining properties under its control. These include Brakpan, Springs, South African Land and Exploration, Daggafontein, East Daggafontein, and Western Reefs. With regard to Daggafontein and Western Reefs, both of these mines are to erect plants for the extraction of uranium from the residue slimes of their respective production plants. Daggafontein expects to have its uranium plant in operation in about

OPERATING RESULTS FOR CORPORATION'S RAND PRODUCING MINES

Company	Year Ending	Tons Milled (000)	Yield per ton dwt.	Revenue per ton* s. d.	Costs per ton s. d.	Profit per ton s. d.	Total Working Profit £	Sundry Revenue Net £	Government Taxation and Lease Payments £	Capital Expenditure and Other Appropriations £	Net Profit £	Dividends Per Share s. d.	Dividends Amount £
Brakpan	1949	1,301	3.9	39 2	32 0	7 2	463,963	—	169,063	73,446	221,454	1 0¾	244,375
	1950	1,401	3.8	47 8	34 2	13 6	948,026	70,867	441,112	67,310	510,471	2 1½	488,750
Springs	1949	1,959	2.9	29 2	25 3	3 11	383,099	—	8,421	340,588	34,090	0 6	252,750
	1950	2,125	2.8	33 2	26 2	7 0	745,260	9,902	67,031	40,438	647,693	1 1½	568,688
S.A. Land	1949	1,063	3.5	34 8	27 4	7 4	391,904	—	77,700	54,108	260,096	1 6	185,625
	1950	1,256	3.5	44 2	30 1	14 1	886,092	4,982	367,577	126,587	396,910	3 0	371,250
Daggafontein	1949	2,579	5.1	51 0	20 7	30 4	3,915,088	—	2,070,611	288,878	1,555,599	4 4½	1,531,250
	1950	2,904	5.0	63 8	21 9	41 11	6,087,388	107,037	3,580,530	341,899	2,271,996	6 6	2,275,000
East Daggafontein	1949	1,140	4.2	42 2	26 3	15 10	903,055	—	409,602	85,832	407,621	2 3	419,625
	1950	1,189	3.9	49 9	27 8	22 1	1,313,861	3,859	652,613	13,905	651,202	3 6	652,750
Western Reefs	1949	1,021	4.9	48 9	29 10	18 11	968,302	145,067	401,236	62,206	649,927	1 4½	472,656
	1950	1,114	4.7	59 10	31 11	27 11	1,558,044	22,709	690,011	24,867	865,875	2 6	859,375

*Working revenue for 1950 includes amounts received from premium gold sales which are as follows: Brakpan £48,041; Springs £51,631; S.A. Lands £40,388; Daggafontein £130,911; East Daggafontein £41,301; Western Reefs £46,970.

three years time, and Western Reefs in about three-and-a-half years. Over a ten-year period net profits from the extraction of uranium is estimated to be of the order of 4½d. per share per annum on the existing capital of Daggafontein, and of the order of 3d. per share in the case of Western Reefs.

The operating results for the past two years of the above mines are set out in the two tables below.

ANGLO-AMERICAN'S O.F.S. INTERESTS

Although the epic story describing the opening up of the Orange Free State is too well known to recapitulate here it is worth repeating that the opening up of this new gold field has been due in no small measure to the initiative and foresight displayed by the Anglo American Corporation and its chairman, Sir Ernest Oppenheimer.

The Corporation's interests in this gold field is maintained through direct holdings in many of the mining and other companies, but its principal instrument for this purpose is the Orange Free State Investment Trust, more familiarly known as "Ofsits."

Of the 13 developing mines in the O.F.S., Anglo American controls 7. They are: Welkom, President Steyn, President Brand, Western Holdings, Free State Geduld, and the two newcomers, Loraine and Jeannette. All of these companies are forging ahead satisfactorily, and from borehole results indications are that they all promise to become high yielding gold producers.

Welkom.—During 1950, both of Welkom's shafts intersected the Basal Reef, and shaft sinking operations were stopped below the horizon. Up to the end of March, 1951, a total of 23,056 ft. of development had been completed from both shafts; of this 1,316 ft. was driven on reef, and 59.06 per cent proved payable, giving an average assay value of 44.63 dwt. over an average width of 8.81 in., equivalent to 393 in.-dwt. The two shafts should connect up in about August next and if the present rate of progress is maintained, provided nothing unforeseen happens, production will begin this year.

President Steyn.—The company made good progress during 1950 in shaft sinking at both shafts. By the end of March, 1951, No. 1 shaft was only 770 ft. short of the expected Basal Reef horizon, while No. 2 shaft at the same date, had reached a depth of 3,035 ft. The Basal Reef horizon in No. 2 shaft is estimated to be at a depth of 4,900 feet. During the year, two boreholes were sunk in the vicinity of No. 1 shaft to obtain further information, and in one borehole, W.P.5, an initial intersection of the Basal Reef was made at 3,468 ft. assaying 53 in.-dwt., whilst in the deflection, a value of 328 in.-dwt. was obtained at 3,446 ft. In the other borehole, W.P.6, the Basal Reef was intersected at 3,932 ft., assaying 546 in.-dwt.

President Brand.—At the end of March, 1951, President Brand's No. 1 shaft had reached a depth of 2,213 ft., which is estimated to be 2,237 ft. above the Basal Reef horizon. At No. 2 shaft at the same date, the shaft had been sunk to 1,529 ft. The intersection of water-bearing fissures by both shafts retarded the rate of sinking and required sealing by cementation.

Western Holdings.—This company was the first of the Corporation's companies to be formed in the O.F.S., having been registered in 1937. Two shafts are being sunk, but owing to the intersection of heavy water-bearing fissures the original estimated dates for the completion of the shafts have had to be revised. At the end of March, 1951, No. 1 shaft had reached a depth of 3,425 ft., or some 725 ft. above the expected Basal Reef horizon. No. 2 shaft on the same date (March 26, 1951) had been sunk to a depth of 3,294 ft., or approximately 956 ft. above the Basal Reef horizon. During the year, two boreholes sunk on the farms Dagbreek 360 and Mooitoekomst 400 proved the Basal Reef lies at a shallower depth in the eastern portion of the property than originally anticipated. This result has confirmed the company in its decison to temporarily stop the two shafts just below the Basal Reef horizon, to enable development to start as soon as possible.

Free State Geduld.—Free State Geduld is generally considered as the mine which has the greatest potentialities of any in the O.F.S. By the end of February this year, the company's No. 1 shaft had reached a depth of 3,090 ft., which is estimated to be about 1,700 ft. above the Basal Reef horizon. At the same date, No. 2 shaft had reached a depth of 3,805 ft. The original development scheme envisaged in stopping this shaft temporarily at a depth of 40,200 ft., to enable underground development to start in the direction of the farm Geduld 97. However, as the result of recent drilling, it has been decided that this shaft should be sunk to its final depth of 5,600 ft. Although this will delay the starting of development for some months, it is expected that when the development programme is initiated the building up of ore reserves will be more rapid.

Loraine and Jeannette.—Loraine and Jeannette Gold Mines are in their early days. However, no time has been lost in opening up the mines. At Loraine preliminary operations were started in April, 1950, and by the end of March, 1951, No. 1 shaft had reached a depth of 6,366 ft. The Basal Reef horizon is estimated to lie at a depth of 5,000 ft. The sinking of No. 2 shaft was expected to begin in May.

Jeanette started shaft sinking in June, 1950.

Both Loraine and Jeannette will be served by the new model township of Allanridge.

DEVELOPMENT RESULTS AND ORE RESERVES OF THE CORPORATION'S RAND PRODUCING MINES

Company	DEVELOPMENT						ORE RESERVES				Capital Expenditure*
	Year Ending	Footage Advanced	Footage Sampled	Percentage Payable	Average Reef Width (inches)	Average Assay Value (dwt.)	Tons	Stope Width (inches)	Stope Value (dwt.)	Inch-dwt.	£
Brakpan	1949	62,375	52,785	27.9	35.48	13.30	4,804,300	41.58	4.27	178	—
	1950	69,521	54,940	25.9	34.90	13.77	3,825,200	41.82	4.58	192	59,585
Springs	1949	39,231	32,060	28.2	23.75	17.31	3,994,400	44.13	4.31	190	257,733
	1950	40,306	33,500	28.6	26.14	16.42	4,042,500	43.91	4.32	190	26,447
S.A. Land	1949	59,953	46,485	43.5	27.17	14.71	2,746,500	41.60	4.64	193	91,427
	1950	68,772	48,150	46.8	26.33	14.73	3,022,200	42.00	4.61	194	16,827
Daggafontein	1949	44,852	33,750	44.5	20.91	21.91	14,941,200	43.61	5.99	261	260,977
	1950	54,559	39,880	42.2	24.88	12.14	14,608,400	43.46	5.78	251	53,981
East Daggafontein	1949	59,301	42,805	24.3	8.48	36.95	4,447,500	36.84	4.75	175	23,584
	1950	61,685	49,115	32.7	8.60	37.21	4,690,600	36.88	4.59	169	16,137
Western Reefs	1949	81,419	30,995	47.9	22.26	21.13	4,145,000	45.91	5.34	245	396,999
	1950	82,318	34,530	48.8	25.30	16.84	4,173,000	45.79	5.23	240	585,438

*Incurred on shaft sinking and equipment.

Technical Briefs

New Laboratories of Tin Research Institute Opened

The new laboratories of the Tin Research Institute were opened by H.R.H. the Duke of Gloucester at Greenford, Middlesex, on May 31.

The purpose of the Tin Research Institute (the headquarters of the Tin Research and Development Council, an organization maintained by the tin miners of six individual countries and the only example of international cooperation of its kind in the world) is to carry out research into the uses and applications of tin and to give technical advice and assistance to industries and manufacturers.

The Council, founded in 1932 by the tin producers of Malaya, the Netherlands, Bolivia, the Belgian Congo and French Indo-China for the purpose of improving existing uses of tin by research and development, is maintained entirely by voluntary contributions from tin producers in those areas and the results of its work are published and distributed free to all users of every nationality. Research is mainly carried on at Greenford, but certain work is entrusted to laboratories, both in England and overseas.

A constant study of new uses of tin is carried out by the Institute; for example, new alloys and new electrodeposited coatings have been devised and one of the most noteworthy contributions made by the Institute is the development of a new electroplate which may help to solve the shortage of chromium and nickel for plating. From the scientific point of view, this discovery is of special interest because the new electroplate is not merely a single metal, but a new metal alloy, containing only about 35 per cent of nickel, not previously available.

The new electroplate is an alloy of tin and nickel, but uses far less nickel than ordinary nickel plating. It has a warm rose tint, which is in striking contrast to the cold blue cast of chromium, and it is believed that it will have valuable decorative qualities and could be particularly important to industries affected by the nickel and chrome shortage.

A feature of the new tin-nickel plating process—a one coat process—is that the coating is deposited bright and requires scarcely any polishing. It is stated to be hard and resistant to scratches and retains its brilliance permanently, even under bad weather conditions.

Lime in the Flotation of Sulphide Minerals

The separation of pyrite and arsenopyrite is a problem of some difficulty. Plaksin and Okolovich (*Doklady Akad. Nauk.* U.S.S.R., 71, 365, 1950) have achieved this separation by floating the minerals in a lime solution in the presence of the usual reagents.

The minerals are subjected to a preliminary activation with copper sulphate using about 1 kg. of the salt to a ton of ore. The ore is then floated, keeping the lime content of the aqueous part of the pulp between .02 and .03 per cent. The lime depresses both minerals, but the effects are somewhat different and it is due to this difference that the separation can be made. In the case of pyrite, insoluble chemical reaction products are formed on the surface of the mineral particles, but in the case of arsenopyrite, it is a sorption effect which predominates. Slimes having a particle size of less than 5 μ must be separated before the commencement of flotation.

A later paper by the same workers (*ibid*, 72, 97, 1950) indicates that the flotation may be improved by the use of ammonium chloride, which appears to prevent the formation of lime films on pyrite surfaces to some extent. 200 grammes per ton of potassium ethylxanthate was used as the collector and 240 grammes per ton of pine oil as the frother. The period of flotation was about 10 minutes and the lime and ammonium salt were added simultaneously.

New Norwegian Iron Ore Benefication Method

A large consignment of American iron ore has arrived at the plant of the A. S. Titania, Sokndal, South Norway, reports Reuter from Oslo. The ore is to be enriched there by a new method worked out by A. S. Titan Co., Fredrikstad, in connection with the company's work on enriching Norwegian titanium ores. The method has already been tried out on a semi-technical scale with poorer Norwegian iron ore and very satisfactory results are reported.

The principle of the method is understood to be quite new and patents have been taken out in a number of countries, including the U.S. where it is understood that industry is interested in the new process, as it may open possibilities for making use of poorer iron ores.

The Chemical Treatment of Pit Props

F. S. Crawford and R. M. Wirka have recently described tests carried out in a mine at Negaunee, Michigan (*U.S. Bur. Min.*, 1950, *Rept. Invest.* 4622). The pit props were selected from one-year-old seasoned hard and soft maple. They were then treated with aqueous preservations and distributed around in various parts of the mine. The life of untreated props was 3.8 years. Those treated with 0.5 lb. per cu. ft. of zinc chloride had a life of 13.3 years. Those treated with 0.07 lb. per cu. ft. of sodium fluoride had a life of 11.2 years, and those treated with 0.23 lb. of sodium borate per cu. ft. had a life of 7.7 years. The depths of penetration were 0.5 in. in the case of zinc chloride and 0.07 in. in the case of sodium fluoride.

Smelting Ilmenite in the Electric Furnace

A method for the production of a high-grade material from a low-grade ilmenite has been described by C. K. Stoddard and co-workers (U.S. Bur. Mines, *Rept. Invest.* No. 4750, 1950). The iron is removed by smelting in an electric furnace, so producing a titanium rich slag which can be further processed. A 500 lb. and a 2,500 lb. furnace were used and a total of 36,190 lb. of titanium rich slag and 19,057 lb. of pig iron was produced. The slag had an average analysis of: TiO_2 67 per cent, CaO 10 per cent, MgO 7.2 per cent, SiO_2 4.5 per cent, Al_2O_3 4.8 per cent, FeO 6.2 per cent and S 1.2 per cent, and the pig iron had the following analysis: C 3.85 per cent, S 0.69 per cent, Si 0.16 per cent. Although the method is limited to ilmenite ores which contain iron oxides which are readily reducible with carbon, the authors consider commercial operation of the process would be quite successful.

The Vital Link

H. J. Enthoven & Sons, on May 29 last, showed a documentary film in colour, with a commentary by Mr. Frank Phillips, entitled "The Vital Link," revealing different phases in the manufacture and uses of the company's "Super-speed" activated resin cored solder.

Excellently produced, the film forcibly underlines the prime importance of having sound permanent connections in electrical apparatus. This essential feature is, in fact, the explanation for the title of the film which, it is claimed, is the first documentary of its kind to be presented on this subject. Well taken shots show some of the lead and, to a lesser extent, tin refining activities of the company in providing raw materials for its solder. The important part played by the research and chemical department of the company is featured, and the film shows how all the materials going into the finished solder are subjected to rigorous testing before they are passed for production of "Super-speed." This activated resin cored solder produces joints of the highest quality and permanence and, most important, is rapid in action compared with the slow action of ordinary solder.

Metals, Minerals and Alloys

The very confused conditions affecting the American metal trade, and consequently infecting also the situation in other countries as a result, appears to be deepening, but otherwise the general situation has not revealed any fresh features. Just at present there seems to be some evidence of trade recession in the United States but this may be no more than the repercussions of the many controls in operation or projected which inevitably create uncertainties and doubts about the future of various trades.

The licensing regulations in force in the U.K. for raw copper, lead and zinc will be extended from the beginning of next month to include scrap and residues of these metals.

It is reported from Denmark that the Danish Government is to take over control of the distribution in Denmark of copper, zinc, nickel, cadmium and aluminium from July 7. From that date importers of those metals will require a permit for the sale, delivery or use of these materials.

Copper.—The problem of double or even treble price metal if the grey market be included, continues a monkey-puzzle for traders and consumers alike in the United States. For the most part, domestic producers and consumers are pressing for an advance on the ceiling figure of 24½c. to the world export price of 27½c., but the office of Price Stabilization has so far failed to give any indication as to how the current anomalies are going to be dealt with. The pressure for lifting the domestic price is accentuated by the fact that the wage contracts of the larger western producers run out on June 30. Foreign producers are finding a market for 27½c. copper in the United States at the expense of the purely domestic producer especially the customs smelter, who is restricted to 24½c. Grey market copper is said to be fetching up to 35c. Exceptionally to the widespread agitation for a higher domestic ceiling, Mr. Charles R. Cox, of the Kennecott Copper Corporation has declared there is no need for an increase in the domestic price at this time, which would, he considered seriously affect U.S. business. While he concedes that the deflection of concentrates and metals ordinarily imported into the U.S. might alter the situation, he can see no evidence that any copper is being lost as a result of the higher Chilean price. This statement is said to have created some astonishment but it must be remembered that Kennecott was very reluctant to advance prices last year when they were being pushed up. The satisfaction said to have been expressed by the Chuciquamata miners over the success of the negotiations for a higher copper price (*Mining Journal*, May 18, p. 483), seems to have been short lived, as it has been stated by the Minister of the Interior and the Vice-President of Anaconda that the output from the mine has declined by 50 per cent—from 16,500 to 8,000 tons a month owing to a go-slow strike. Japanese output in April was also affected by a strike of metal miners: the figure for electro is given as 6,600 tons—more than 1,000 tons down.

The first meeting between O.P.S. officials with domestic producers and customs smelters was held on Wednesday. Though no decisions were reached regarding prices, the impression created was that the domestic ceiling would not be raised. Apparently the price control fears that if the domestic price were increased to the world level of 27½c. there was no guarantee that it would not go higher.

A leading Canadian seller has announced his adherence to the U.S. export price of 27½c. (29.45c. in Canadian currency)

Lead.—Conditions somewhat similar to those ruling in copper are now beginning to appear in the United States where direct sales of Mexican lead to consumers are being made by a custom smelter at 21c. f.a.s. Gulf Port compared with the ceiling price for domestic metal of 17c.; 21/22c. continues to be paid for Mexican lead for Europe. Despite new restrictions on civilian consumption, supplies in the U.S. are expected to continue very tight. Some interesting statistics on the lead situation and outlook in the principal producing and consuming countries of the world are given in an article by Mr. R. L. Wilcox in another column of this issue.

Tin.—Tin has continued a declining market this week, helped by the action of the R.F.C. in lowering their price to 136c. per lb. for Grade A tin on June 1, and Mr. Stuart Symington, Administrator of the R.F.C., is reported as saying "we intend to do everything we can to get the price of tin down on the world market." These tactics are proving successful, at least temporarily, as the Straits price fell £25 15s. on Tuesday to £1,078 17s. 6d. a ton. The latest prices for tin in Singapore and London are given below by our Metal Exchange Correspondent. The interim agreement with Bolivian producers expired at the end of May and negotiations for a fresh agreement are still proceeding. The R.F.C. has made no fresh purchases of tin since March 6, and unless the R.F.C. is overruled by higher authority, the possibility of stemming the fall must depend on whether demand from other countries, which must have been considerably retarded, can be maintained in volumes sufficient to offset the American defection.

Malayan Information Agency reports shipments of Straits tin during May as 4,970 tons compared with 5,329 tons in April. The following are details of destination: Europe, 2,261 tons; British possessions, 1,449 tons; U.K., 1,038 tons; and other countries 222 tons. There were no shipments to the U.S.A.

Zinc.—There is practically no fresh news regarding zinc this week. New restrictions on civilian consumption in the United States promise to make the situation for these consumers still more critical. High-grade consumers at the third quarter of the year will only get 70 per cent of their base period use, with other grades remaining at 80 per cent. In addition, producers must set aside 28 per cent of their scheduled monthly output of high-grade, for defence purposes as compared with 10 per cent previously and a further 5 per cent to meet emergency demands.

Magnesium.—Experiments are being made by the Herneya Electrical Chemical works in Southern Norway with the production of magnesium oxide of which regular production is expected to start in the near future. In the autumn it is expected to start production of magnesium metal with an eventual target of 3,000 tonnes a year.

Manganese.—The Chairman, Mr. H. R. Holmes, of the Central Provinces Ore Co., speaking at the annual meeting reported in another column, said that further diamond drilling at the Valaghat Mine confirmed favourable results previously reported. The ore at depth was of excellent quality and there was no doubt that the beds in the Central Provinces now called Madhya Pradesh extended to considerable depth and assured outputs for many years to come. Drilling would be transferred to other property. The company is to install a heavy media separation plant to recover manganese from old dumps.

The annual report of the Associated Manganese Mines of South Africa states that additional contracts for substantial quantities of ore over a number of years have been entered into.

Molybdenum.—The N.P.A. have directed molybdenum suppliers to allot only 35 per cent of their schedule civilian requirements during June, and reserve the remainder for defence use.

Nickel.—U.S. civilian consumers of nickel are to get only 20 per cent of the available supply in the current month, owing to heavy military demands. The International Nickel Co. has announced an extensive drilling programme on the ore deposits on Shebandowan Lake, 58 miles west of Port Arthur, where Mr. Julian Cross, the discoverer of Steep Rock mine has estimated that 30,000,000 s.tons of economic ore are already indicated.

Sulphur.—The Secretary for Overseas Trade stated in Parliament this week, that while it was desired to obtain sulphur from Norway in the trade talks with the Norwegian Government, the normal markets for sulphur from pyrites was Sweden and Finland and there had been no imports from Norway over the last two years. Mr. Eric Louw stated that South Africa was seriously short of sulphur.

Tungsten.—Though only a small business in wolfram has been reported this week, the market is again slightly firmer, and may be called 560/570 sh. per unit. The Portuguese ministries of Finance and Economy are creating fresh trouble for the trade. The Ministry of Finance is reported to have decided to raise the export duty on wolfram concentrates from the present Esc.1½ to Esc.40 per ton. While the Ministry of Finance hopes that the special Export Tax of Esc.36 per kilo introduced last February will be abolished, this question is still under discussion with the Ministry of Economy; it is hoped that a statement will be available before long. Exporters are reported to have suspended transactions, as with the two taxes amounting to Esc.76 per kilo, and the average internal price of Esc.80 they can do no business. Even without any profit the export price is calculated at Esc.156 per kilo with the best offers from importing countries Esc.145. With demand thus stopped, most of the mines are reported to be idle.

Wolfram is not the only sufferer by this taxation, as the tin concentrate duty has also increased from 1½ per cent a.v. to 5 per cent the respective charges rising from Esc.392 to Esc.810 per tonne. Briefly, the Portuguese policy on export duties appears to be what they think the traffic can carry.

The high price for tungsten concentrates has been stimulating prospecting for tungsten minerals in Queensland, recently, apparently with considerable success. The Chairman of the Wolfram Tin Proprietary Ltd. claims that on the company's property in south-eastern Queensland 26 parallel reefs averaging some 900 yd. in length have been opened with sufficient ore in sight to keep the company going for many years. The first consignment of wolfram sent to Sydney was disposed of at a price returning £A.1,800 per ton.

Large deposits of what is described as high-grade tungsten ore are said to have been discovered by American prospectors in the Noumea district of New Caledonia.

Uranium.—A Reuter despatch states that Mr. Ralph G. Brown, president of Western Goldmines Inc. announces that the company has discovered uranium and vanadium in the form of carnotite ore on its silver reef property near Leeds, in the south-west corner of Utah. Western Gold Mines controls 38 claims and from two about 125 tons have already been shipped to Vitreo Chemical Co.'s mill in Salt Lake City. According to Mr. Brown the ore shipped was of good commercial grade. He also stated that the U.S. Atomic Energy Commission has made an agreement for mineral exploration with Western Gold Mines and engineers of A.E.C. and the United States geological survey are now on the property preparing for a diamond drilling programme. This programme to be carried out entirely at Government expense, is expected to start very soon. The president of the Vanadium Corporation, Mr. W. C. Keeley, has also announced that the development work by the corporation in Colorado has proved the existence of additional high-grade uranium ores, and that pitchblende has been found for the first time in the United States.

Gold.—The United States Secretary of the Treasury, Mr. Snyder, commented strongly at a Press Conference this week on the recommendation of the Economic Commission to Europe advocating currency appreciation, and in supporting the International Monetary Fund's recommendations, declared that there was no justification for currency appreciation, which would raise the price of things the United States must buy, engaged as she was in a great re-armament effort and major contribution to the cause of all friendly countries working to that end. Mr. Gaitskell in Parliament declined to make any statement on the E.C.E. report.

The London Metal Market

(From Our Metal Exchange Correspondent)

The bearish feeling towards Tin which has been evident in recent weeks, together with the fact that demand remains at a somewhat low level, resulted at the end of last week in the price for forward metal on the London Metal Exchange falling below the £1,100 mark. Furthermore, on Friday the Singapore Tin price, which has for some time been so noticeably steady, fell below the price which, for a considerable time, had been the lowest level reached in the Eastern market. As a result of these factors and in the course of brisk trading during the early part of the week in London, it was hardly surprising to find that prices for both Cash Tin and Metal for forward delivery showed a marked decline on those ruling at the close of the previous week.

It is still impossible to state precisely what factors, if any, influence the American authorities when adjusting the R.F.C. selling price, and it only remains to be seen what is their next move in their campaign to bring about a lower price for Tin, following the easiness in the market subsequent to their latest price reduction.

On Thursday the official close on the tin market was: Settlement price £1,045, Cash Buyers £1,045, Sellers £1,050; Three months' Buyers £1,028, Sellers £1,029. In the afternoon the market was steady. Turnover for the day was 230 tons. Approximate turnover for the week was 1,290 tons.

The Eastern price on Thursday morning was equivalent to £1,080 15s. per ton, c.i.f. Europe.

Iron and Steel

A return to steel rationing, which has been a subject of speculation for some time past, is now definitely foreshadowed. It was disclosed by the Minister of Fuel and Power on Monday last that "urgent consideration is being given to the whole question of the arrangements to ensure that the supplies of general steel shall be distributed in such a way as to maintain a proper balance between the various needs of our national life." Certainly there is growing need for some orderly system of distribution which will replace the present scramble for supplies, and ensure that assisted industries shall enjoy some measure of priority.

Hopes are also entertained of a not distant recovery in iron and steel production. The scrap position is still very difficult as imports continue to shrink. But the intake of foreign ore is on a slightly better scale and further acceleration should soon be possible as the shipment of American coal to American ports is nearly completed.

In the meantime, however, many blast furnaces are still on slack blast, production of pig iron falls substantially short of requirements, and although allocations to the various foundries have been reduced, deliveries are heavily

in arrears. Foundrymen would be glad to make good the deficiencies in the supply of pig iron by making more extensive use of cast iron scrap but this material is even more scarce than pig iron. Hitherto, stoppages at the foundries have been avoided, but the position is now very precarious.

There is no slackening in the consumer demand for steel. The imposition of export licensing, and the scarcity of cargo space have tended to restrict the volume of exports, but home requirements swollen by re-armament work, are very heavy and cannot be fully satisfied. Next month the new Margam steel plant is to come into operation and will make a substantial contribution to the output of sheets which are at present in very short supply. On the other hand some of the South Wales plants hitherto producing billets are now fully engaged on sheet bars. This means that the re-rollers are running short of material to keep their mills in operation and very little imported material is available to eke out home supplies. Steel makers are dealing faithfully with their commitments to the shipbuilders, but other industries are having to wait long periods for material on order.

Mining Men and Matters

Birthday Honours List.—The King's Birthday Honours List was published yesterday. A selection from the List of persons receiving awards of interest to readers of *The Mining Journal* is given below. Mr. D. R. Grenfell, M.P. for the Gower Division of Glamorganshire and Secretary of Mines from 1940-1942, was created a Privy Councillor. Knighthoods were conferred on Mr. R. Duncalfe, chairman of the British Standards Institution; Mr. L. H. H. Lower, finance member of the National Coal Board; Mr. R. Snedden, director, Globe & Phoenix Gold Mining; Mr. H. W. H. Warren, managing director, Associated Electrical Industries; director, British Thomson-Houston; Mr. J. R. Young, director, Vickers. The C.B.E. was conferred on Mr. J. C. Bennett, director, Henry Gardner & Co., and Amalgamated Metal Co.; Mr. P. J. Sellier, regional opencast director, Ministry of Fuel and Power; Mr. G. T. W. Whitehead, assistant general manager (Works), Johnson & Phillips; Mr. G. Wood, chairman and joint managing director, John Fowler & Co. (Leeds), and chairman of Thos. W. Ward.

Mr. S. S. Taylor, upon retirement from business, has resigned from the board of the Anglo American Corporation of South Africa and from the boards of the eight undermentioned companies: African & European Investment, Anglo American Investment Trust, Brakpan Mines, The Consolidated Mines Selection, De Beers Consolidated Mines, Lydenburg Estates, Mufulira Copper Mines and Springs Mines.

The Cornish Institute of Engineers will hold their summer meeting on Saturday, July 7.

J. K. Smit & Sons and J. K. Smit & Sons (Diamond Tools) have announced that as from June 4, their head office will be located at 22/24, Ely Place, Holborn Circus, London, E.C.1. Telephone: Holborn 6451.

JUNE 7 PRICES

COPPER

Electrolytic	£234 0 0 d/d
Fire refined, high conductivity	£234 0 0 d/d
Fire refined, high grade	£233 10 0 d/d
Fire refined, ordinary quality + 99.7%	£233 0 0 d/d
Fire refined, ordinary quality + 99.2%	£232 10 0 d/d

TIN

(See Metal Notes above for Thursday's Metal Exchange prices)

LEAD

Soft foreign, duty paid	£160 0 0 d/d
Soft empire, including secondary lead	£160 0 0 d/d
English lead	£161 10 0 d/d

ZINC

G.O.B. spelter, foreign, duty paid	£160 0 0 d/d
G.O.B. spelter, domestic	£160 0 0 d/d
Prime Western	£160 0 0 d/d
Electrolytic and refined zinc	£164 0 0 d/d
Zinc (99.99% Zn)	£166 0 0 d/d
Sheets	£176 0 0 ex works
Zinc oxide (red seal)	£178 0 0 d/d
Zinc oxide (green seal)	£179 10 0 d/d
Zinc oxide (white seal)	£180 10 0 d/d

ANTIMONY

English (99%) delivered, 10 cwt. and over	£390 per ton
Crude, (70%)	£305 per ton

NICKEL

99.5% (home trade)	£454 per ton

OTHER METALS

Aluminium, £124 per ton.	Palladium (scrap), £8 oz.
Bismuth, 22s. 6d. lb.	Platinum, £27/£33 5s. nom.
Cadmium, 18s. 3d. lb.	Rhodium, £45 oz.
Chromium, 5s. 3d. lb.	Ruthenium, £30 oz.
Cobalt, 15s. 6d. lb.	Quicksilver, £73 10s./£74 ex-warehouse.
Gold, 248s. f.oz.	Selenium, 25s. nom. per lb.
Iridium, £65 oz. nom.	Silver (bar), 78¼d. f.oz. spot and forward.
Magnesium, 1s. 6d. - 2s. lb. according to quantity.	Tellurium, 19s. lb.
Osmiridium, £35 oz. nom.	
Osmium, £70 oz. nom.	
Palladium, £8 10s. oz.	

ORES, ALLOYS, ETC.

Bismuth	40% 13s. lb. c.i.f. 80% 11s.
Chrome Ore—	
Rhodesian Metallurgical (lumpy)	£11 per ton c.i.f.
,, ,, (concentrates)	£11 per ton c.i.f.
,, ,, Refractory	£10 12s. per ton c.i.f.
Baluchistan Metallurgical	£11 11s. per ton c.i.f.
Magnesite, ground calcined	£26 - £27 d/d
Magnesite, Raw	£10 - £11 d/d
Manganese, Best Indian	(Nominal)
Molybdenite (85% basis)	(Nominal)
Wolfram (65%), U.K.	560s./570s. c.i.f. nom.
Tungsten Metal Powder (for steel manufacture)	34s. 6d. nom. per lb. (home)
Ferro-tungsten	32s. 6d. nom. per lb. (home)
Carbide, 4-cwt. lots	£30 3s. 9 d/d per ton
Ferro-manganese, home	£37 19s. 10d. per ton
Ferro-manganese, export	Nom.
Brass Wire	2s. 6½d.
Brass Tubes, solid drawn	2s. 0½d.

OAKLAND METAL COMPANY LIMITED
LONDON OFFICE: 94, New Bond Street, London, W.1
Telephone: GROsvenor 5241/4. Cables: AMOMET LONDON.
Telegrams: AMOMET WESDO LONDON.
WANTED REGULARLY
CONTAMINATED
ZINC ORES containing CADMIUM
ZINC ORES containing COPPER
ZINC ORES containing LEAD
ZINC OXIDES and RESIDUES of every description
TIN ORES and RESIDUES of every description
CADMIUM-BEARING ORES and RESIDUES
COMPLEX ORES AND RESIDUES OF ANY KIND
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The Mining Markets

(By Our Stock Exchange Correspondent)

Gold shares have made a poor showing this week and a glance at the prices given below will reveal hardly one gain. Strong rumours of a revaluation of sterling, together with the cumulative effects of end-of account influences and a downward trend of the price of gold on the free markets, caused this movement. Later an announcement by Mr. Synder, the United States Treasury Secretary, to the effect that he considered such a move would be detrimental to the defence efforts of the free world, cheered the market and prices finished well above the worst.

The decision by the South African Government to restrict sales of gold on the world's free markets to 40 per cent of output is considered a wise one in City circles as it should avoid excessive supply and aid in retaining a satisfactory price level. Native labour available for South African mines is still below requirements and this also can add to working costs. Shareholders in low grade and marginal mines would be well advised to reconsider their position.

The fire at the Daggafontein mine, which broke out on May 31st, is likely to affect milling operations for the current month by 15-20 thousand tons.

The Lead-zinc market was enlivened by the announcement by Rhodesia Broken Hill of a tax free dividend of 2s. 3d. per share. This was well above the most optimistic market estimate and the shares jumped 1s. Readers should remember that this dividend is caused by special taxation factors and is not likely to recur. Distribution can be made tax free during the year of change of domicile but it should be emphasised that next year U.K. holders will be subject to full U.K. tax reduced by DITR.

Beralt Tin and Wolfram have been a good market on rumours that the company has succeeded in placing contracts for the supply of wolfram to United States buyers. The shares, however, closed well below the best following a decision by the Portuguese Government to raise the export duty on the metal. At the time of writing this increase appears to be in addition to that already made some time ago although it seems probable that the earlier tax may be repealed.

Eastern tin shares generally were a better market and moderate buying encountered a shortage of stock and prices of leading shares rose.

Diamonds were firm on De Beers report showing last year's record figures. Sir Ernest Oppenheimer stated that during the first five months of the current year sales of gem and industrial stones had been well maintained and are now running at an even higher figure than for the same period last year. It should, however, be remembered that special factors such as hoarding against inflation and stock piling of industrial stones must be taken into account, and that the present level of turnover is unlikely to be maintained over a long period. Sir Ernest made a strong appeal for the reduction of South African tax on the industry which he said is the only one not relieved from wartime stringency.

Canadian Eagle shares improved on dividend prospects. The immense financial strength revealed by Shell Transport and Trading in the annual report and accounts published during the week brought about a rise in the stock. Anglo-Egyptian Oilfields also improved on news that the company proposes to emigrate to Egypt so as to satisfy Egyptian law and enable the business to operate normally.

FINANCE	Price June 6	+ or − on week
African & European	3⅛	− ⅛
Anglo American Corpn.	8⅜	− ⅜
Anglo-Fresch	23/9	−7½d
Anglo Transvaal Consol.	46/3	
Camp Bird	13/-	−6d
Central Mining (£1 shrs.)	46/3	−7½d
Consolidated Goldfields	2⅛	− ⅛
Consol. Mines Selection	38/10½	−7½d
East Rand Consols	4/3	−3d
General Mining	6⅜	− ⅛
H.E. Prop.	40/-	
Henderson's Transvaal	10/7½	−1½d
Johnnies	3⅛	+ ⅛
Rand Mines	7⅜	− ⅛
Rand Selection	41/10½	−1/10½
Union Corporation	10⅛	− ⅛
Vereeniging Estates	5⅛	− ⅛
Writs	32/6	−1/10½
West Wits.	2⅛	− ⅛
RAND GOLD		
Blyvoors	52/3	−10½d
Brakpan	20/6	−1/3
City Deep	3½	− ⅛
Consol. Main Reef	2⅛	
Crown	4⅛	− ⅛
Daggas	3⅛	
Dominion Reefs	1/10½	−1½d
Doornfontein	26/-	−1/6
Durban Deep	3⅛	− ⅛
E. Daggas	26/-	−1/6
E. Geduld ... (4/- units)	2⅛	− ⅛
E. Rand Props.	4⅛	− ⅛
Geduld	8⅛	−1
Grootvlei	42/-	−6d
Libanon	16/9	−9d
Luipaards Vlei	23/9	−9d
Marievale	23/3	−6d
Modderfontein B	5/10½	−1½d
Modderfontein East	2⅜	− ⅛
New Kleinfontein	36/3	−7½d
New Pioneer	25/6	−2/-
Randfontein	20/-	−1/3
Robinson Deep	14/9	−1/-
Rose Deep	41/3	−1/3
Simmer & Jack	6/9	−3d
Springs	10/7½	−9d
Sub Nigel	3⅛	− ⅛
Van Dyk	15/9	−9d
Venterspost	31/9	−9d
Vlakfontein	17/6	−6d
Vogelstruisbult	27/9	−6d
West Driefontein	6⅛	− ⅛
W. Rand Consolidated	45/-	−2/6
Western Reefs	40/-	−1/10½
O.F.S.		
Alpha F.S.A.	13/6	−1/6
Blinkpoort	25/-	−1/3
Central Mining-F.S.	4/9	−3d
Freddies	15/-	−1/-
Freddies N.	11/-	−7½d
Freddies S.	12/7½	−9d
F.S. Geduld	3⅛	− ⅛
Geoffries	28/3	−3/8
Harmony	24/6	−9d
Lydenburg Estates	10/6	−9d
Middle Wits	23/-	−2/-
Ofsits	2⅛	− ⅛
President Brand	21/3	−1/-
President Steyn	17/9	−6d
St. Helena	31/9	−1/1½
U.F.S.C. & G.	9/6	−6d
Virginia Deb.	71	−6
Virginia Ord.	15/3	−4½d
Welkom	39/9	−1/6
Western Holdings	3⅛	− ⅛
WEST AFRICAN GOLD		
Amalgamated Banket	2/6	−1½d
Ariston	7/4½	
Ashanti	29/3	
Bibiani	11/6	−3d
Bremang	3/7½	−1½d
G.C. Main Reef	3/10½	−1½d
G.C. Selection Trust	10/3	−6d
Konongo	1/9	−3d
Kwahu	4/9	
London & African Mng.	2/9	−1½d
Lyndhurst Deep	1/-	
Marlu	2/7½	
Nanwa	1/-	
Taquah & Abosso	7/6	
AUSTRALIAN GOLD		
Boulder Perseverance	2/9	−3d
Gold Mines of Kalgoorlie	16/6	
Great Boulder Prop.	6/6	−3d
Great Western Consol.	2/-	
Lake View and Star	21/-	
Mount Morgan	20/6	−1/-
North Kalgurli	17/9	−9d
Paringa	9	
Sons of Gwalia	12/6	
South Kalgurli	10/-	
Western Mining	7/6	−6d
Wiluna	11/6	
MISCELLANEOUS GOLD		
Cam and Motor	35/-	−1/3
Champion Reef	9/6	
Falcon Mines	12/-	+3d
Globe & Phoenix	22/9	−6d
MISCELLANEOUS GOLD (contd)		
G.F. Rhodesian	9/-	−7½d
London & Rhodesian	5/9	+1½d
Motapa	3/3	−1½d
Mysore	6/3	
New Guinea	1/7½	+1½d
Nundydroog	8/-	+6d
Ooregum	3/9	+3d
Oroville	12/9	−4½d
St. John d'El Rey	34/4½	−7½d
Zams	35/-	+6d
DIAMONDS		
Anglo American Inv.	4⅞	+ ⅛
Casts	40/9	
Cons. Diam. of S.W.A.	3½	− ⅛
De Beers Defd. Bearer	64⅛6	+3d
De Beers Pfd. Bearer	17⅛	+ ⅛
COPPER		
Chartered	75/7½	−4½d
Indian Copper	5/6	
Messina	5⅛	− ⅛
Nchanga	8	
Rhod. Anglo-American	63/3	−1/6
Rhodesian Selection	40/9	−1/-
Rhokana	22⅛	− ⅛
Rio Tinto	22⅛	− ⅛
Roan Antelope	22/-	−9d
Selection Trust	51/3	+7½d
Tanks.	46/-	−1/9
Tharsis Sulphur Br.	56/3	+1/3
TIN (Eastern)		
Anglo-Burma	3/4½	+3d
Ayer Hitam	28/9	+6d
Bangrin	36/6	−1/-
Gopeng	14/6	+1½d
Hongkong	12/3	
Ipoh	30/3	−1/-
Kamunting	13/9	+3d
Kepong Dredging	13/-	−9d
Kinta Tin Mines	16/3	+7½d
Kramat Pulai	4/4½	
Malayan Dredging	24/6	
Pahang	16/6	+6d
Pengkalen	10/6	
Petaling	12/7½	+3d
Rambutan	15/7½	
Siamese Tin	25/3	−9d
Southern Kinta	13/9	+3d
S. Malayan	29/9	+2/-
S. Tronoh	23/-	+3d
Sungei Kinta	19/4½	
Tekka Taiping	10/3	
Tronoh	29/-	+3d
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	11/-	−4½d
Beralt Tin	25/6	+2/-
Bisichi	4/7½	−1½d
British Tin Inv.	17/9	−3d
Ex-Lands Nigeria	7/9	
Geevor Tin	17/4½	−7½d
Gold & Base Metal	4/-	−1½d
Jantar Nigeria	7/1½	−1½d
Jos Tin Area	11/6	+3d
Kaduna Prospectors	4/3	
Kaduna Syndicate	6/6	
London Tin	5/2½	−2d
Ribon Valley	1/3	−1½d
United Tin	2/10½	−1½d
SILVER, LEAD, ZINC		
Broken Hill South	58/3	−1/3
Burma Corporation	4/1½	−6d
Consol. Zinc	36/4½	−4½d
Lake George	28/-	−9d
Mining Trust	5/1½XD	
Mount Isa	47/3XD	−9d
New Broken Hill	30/6	
North Broken Hill	77/-	−3d
Rhodesian Broken Hill	24/3	+1/-
San Francisco Mines	76/3	
Trepca	4/-	
MISCELLANEOUS BASE METALS & COAL		
Amal. Collieries of S.A.	63/1½	
Associated Manganese	73/9	−3d
Chinese Engineering	2/3	
C.P. Manganese	56/3	
Natal Navigation	6	
Wankie	23/-	−1/4½
Witbank Colliery	4⅛	
CANADIAN MINES		
Dome	$28	
Hudson Bay Mining	$116	+1
International Nickel	$75½	− ½
Mining Corpn. of Canada	£6½	− ½
Noranda	$145	−1
Quemont	£8½	
OIL		
Anglo-Iranian	5½	+ ½
Apex	49/4½	
Attock	30/-	+10½d
Burmah	68/9XD	+1/-
Canadian Eagle Bearer	40/9	+1/6
Mexican Eagle	23/-	
Shell	4⅛	+ ⅛
Trinidad Leasehold	31/-	+3d
T.P.D.	41/-	+3d
Ultramar	35/9	

Company News & Views

E.C.A. to aid Mufulira's Copper Expansion.

At the beginning of this month the Economic Co-operation Administration announced from Washington that it planned to make a loan to Mufulira Copper Mines to enable copper production to be expanded in Northern Rhodesia. Although negotiations between the E.C.A. and the company have been carried on in London for some time, the precise amount of the loan has not yet been stated. However, a figure of somewhere about £3,000,000 has been suggested. This action may be viewed as another step in furthering the recent trend of U.S. foreign investment policy aimed at ensuring supplies of raw materials of which domestic sources are either past their zenith, or are drying up.

The crux of the negotiations would appear to centre around the question of the ultimate destination of the extra copper produced by this loan.

An indication as to how repayment may be made is provided by the announcement on the same day as the above that the E.C.A. was to advance up to Frs. 456,250,000 to raise industrial diamond production in French Equatorial Africa. In this case, the repayment is to be made in diamonds delivered to the U.S. Government. If the loan to Mufulira is to be repaid in kind, it raises such questions as to how much copper will be required to meet the debt, and whether or not the price will be calculated at a fixed rate or at the market prices then prevailing.

Insofar as Mufulira Copper Mines is concerned, it is thought that if agreement on the loan is reached, the new money will be used in opening up the company's Chibuluma prospect. This prospect was first discovered in 1939 and extensive drilling has established the fact that it contains an ore body of relatively small tonnage of high-grade copper-cobalt ore. At the time of the last annual statement, it was stated that the Chibuluma ore reserves are being calculated and will be included in the next annual report.

The loan, if arranged, would be made through E.C.A.'s Strategic Materials Development project. The funds being made available from the 5 per cent portion of sterling counterpart funds remitted to E.C.A. for operating expenses and for stockpile purchases.

Mining Trust's Cash Resources

Registered in 1948, The Mining Trust is a reconstruction of a company bearing the same name. It controls the Britannia Lead Co. and has interests in Mount Isa Mines and New Guinea Goldfields, as well as interests in the Saudi Arabian Mining Syndicate, Big Bell Mines and Anglo-Westralian Mining Proprietary. During the calendar year 1950 the profit and loss account showed gross income at £241,537 as against £247,366 for the previous year. This small decline in profit was due to the smaller dividend for 1950 paid by Mount Isa, 15 per cent against 25 per cent, and from the Saudi Arabian Mining Syndicate which distributed only 20c. as against 45c. in 1949. However, these reductions were nearly wholly offset by the increased dividend of 75 per cent paid by Britannia Lead against 50 per cent previously, and the higher receipts from fees and commissions. Expenses at £27,515 remained virtually unchanged, and after charging £126,664 for profits tax and income tax, there remained a net profit of £87,358 against £100,977 for 1949. The dividend of 6d. per share, less tax (5d. per share), absorbed £78,041. The forward balance was higher by £7,830 at £54,198.

The chairman, the Rt. Hon. The Earl Castle Stewart, commenting on the outlook for the future, said that while the company was not looking for any immediate spectacular increase either in income or capital assets, the directors felt that it was well placed to take advantage of any new business which may be offered to it, and that pending investment of some of its present cash resources which at the end of 1950 stood at £384,893, the company should continue to receive during the coming year satisfactory dividends from Mount Isa, Britannia Lead Co. and other companies in which it is interested.

Motapa Passes Dividend

Motapa Gold Mining Co., the Southern Rhodesia gold producer in the Consolidated Goldfields of South Africa group, has had a difficult year. Although the tonnage milled during 1950 at 253,350 tons was higher by 33,850 tons over the previous year, the yield at 2.187 dwt. per ton, was lower by 0.255 dwt. Working costs increased by 2/4.5d. per ton milled to 20s. 2.8d., while working profit per ton dropped to 6s. 11.4d. from 8s. 11.2d. The advance in working costs was due to a marked increase in the cost of stores, the higher cost of electric power and the higher rate of development footage accomplished, the net result being that working profit declined by £9,968 to £88,060.

The net profit for the year figured at £79,644 out of which £45,576 was transferred to general reserve and the remainder carried forward, whic hauounted to £101,326 compared with £91,682 in 1949.

The development footage advanced during the year and totalled 16,054 ft. of which 2,765 ft. proved payable at an average vaue of 3 dwt. per ton, over a width of 9.7 ft. Ore reserves fully developed as at December 31, 1950 were estimated at 361,000 tons averaging 3 dwt. per ton over a width of 12.3 ft. Compared with the previous year, these figures represent a decrease of 25,000 tons and a decrease in value of 0.3 dwt. per ton, the stoping width being lower by 2 ft.

The difficulty experienced during the year in metallurgical recovery persists, but every effort is being made to overcome these difficulties brought about by the refractory nature of the ore treated.

Pengkalen Forges Ahead

The report and accounts for the year ended September 30, 1950, of Pengkalen, the Malayan tin producer, showed that the tonnage of tin ore recovered increased by 152.96 tons to 560.92 tons. Although the volume of ground treated was less than in the previous year, recovery per cu. yd. advanced to 0.72 lb. compared 0.45 lb. per cu. yd. previously. A particularly good feature in these times of rising costs was the lowering of production costs by no less than £52 10s. 4d. per ton to £111 17s. 11d. per ton. Further, the price received for tin ore increased by over £38 to £387 5s. 6d. per ton.

The upshot of these favourable features was reflected in the profit and loss account, which disclosed gross earnings of £279,264 against £180,429 previously. From the £181,588 (£96,609), available, a net amount of £43,450 was appropriated to meet the dividend distributions which aggregated 55 per cent, equivalent to 2s. 9d. per share on the £320,000 Preferred Ordinary shares of 5s. each, and 45 per cent, equivalent to 2s. 3d. per share on the 400,000 Ordinary shares of 5s. each. This distribution compares with 32.5 per cent and 22.5 per cent respectively in the previous year. General reserve was strengthened by the addition of £20,000 against £10,000, bringing that fund up to a total of £76,884. U.K. taxation absorbed £94,974, and Mr. Wickett, the chairman, points out that the U.K. tax liability, together with Malayan taxation required a total of £134,227, whereas shareholders only

received £43,450 net in dividends. The carry forward amounted to £20,851 against £18,536 in the preceding year.

Prospects for the current year seem particularly favourable, as outputs of tin ore during the first six months ended March, 1951, totalled 267¾ tons, which if maintained will yield the company over 735 tons tin ore, a figure which has not been bettered in the last 20 years.

Company Shorts

Nchanga's Excellent Results.—Nchanga Consolidated Copper Mines and Rhodesia Broken Hill Development, two of the companies which transferred their seats of control to Northern Rhodesia, have now announced their results. Nchanga's profit, after tax, advanced steeply from £696,708 to no less than £3,112,917, and the dividend on the £7,000,000 issued capital for the year ended March 31, 1951 is being raised to 37½ per cent compared with 20 per cent paid in the previous year.

	1950/51	1949/50
Profit (subject to audit) ...	£4,977,843	£1,531,310
Taxation	£1,864,926	£834,602
Net profit	£3,112,917	£696,708
To General Reserve	£700,000	£1,200,000

The board of Nchanga state that as the current dividend is payable partly out of profits earned in the nine months immediately preceding January 1, 1951, on which date the company transferred its seat of management and control to Northern Rhodesia, three-quarters of it will be regarded as a free of tax dividend for U.K. tax purposes. It is emphasized that this favourable tax arrangement will apply only to this dividend. U.K. tax at a reduced rate to allow for unilateral relief will be deductible from the remaining quarter of the dividend. This rate will be announced later. Northern Rhodesia income tax is not in any case deductible from the company's dividends.

Under existing legislation, future dividends will be paid: (a) to members with registered addresses in the U.K. at the declared rate, less U.K. income tax, at a rate reduced by a provisional allowance for relief from double taxation; (b) to other members at the declared rate, without any deduction of tax.

Rhodesia Broken Hill Pays 45 Per Cent.—The net profits of Rhodesia Broken Hill Development Co., the zinc-lead producer, have risen from £1,026,528 to £1,753,736, and the dividend on the £3,250,000 issued capital for 1950 is being stepped up from 40 per cent to 45 per cent.

	1950	1949
Profit	£2,762,875	£2,233,424
Taxation	£1,009,139	£1,206,896
Net Profit	£1,753,736	£1,026,528
To Capital Reserve	£400,000	£300,000

As the Rhodesia Broken Hill dividend is payable out of profits earned before January 1, 1951, when the company transferred its management and control to Northern Rhodesia, it will be regarded as a free of tax dividend for U.K. tax purposes. It is emphasized that this favourable tax arrangement will apply only to this dividend. In future, dividends will be paid on the same tax basis as Nchanga Consolidated Copper Mines.

Burmah Oil's Dividend at Pre-War Rate.—In addition to repeating last year's distribution of 15 per cent, Burmah Oil confounded the pessimists and optimists alike by adding a 6 per cent bonus, making a total distribution of 21 per cent or 3s. 8.4d. per £1 share in respect of the year 1950. This dividend payment has not been equalled since 1938 and 1939, when precisely the same distribution was made. Group profits before tax amounted to £8,890,806 against £7,813,856. U.K. and overseas taxation amounted to £5,999,348 (£5,131,914), giving a net profit over the year of £2,891,458,which compares with £2,681,942 in 1949. From the £3,439,309 available, £1,203,332 (£1,350,000) was placed to general reserve. Dividends on Preference stocks, less tax, required £165,000, and the dividends and bonus an Ordinary, aggregating 21 per cent, less tax, absorbed £1,523,036, leaving a balance of £547,941 to be carried forward.

Middle Wits Higher Earnings.—Middle Witwatersrand (Western Areas), the important exploration and shareholding company under the control of the Anglo-Transvaal Consolidated group, showed gross earnings for the calendar year 1950 of £474,889 against £239,596 in the preceding year. The chief item making up this satisfactory figure was £347,558 received as vendors' consideration from Virginia Orange Free State Gold Mining and Merriespruit (Orange Free State) Gold Mining. Net profit before tax figured at £407,767 (£176,615), and to this was added £221,608 brought in, making £629,375 available. Taxation called for £79,993 (£8), the sum of £3,125 was appropriated to meet expenses in connection with the company's Paris Stock Exchange quotation, and the carry forward amounted to £546,257 against £221,608.

The value of the company's quoted investments at cost is shown in the balance sheet at £1,026,962, the market value of these investments as at the end of 1950 was £1,735,329.

The company holds 67 per cent of the issued capital of New Klerksdorp Gold Estates which during 1950, showed a working profit of £28,041, equal to 5s. 4.4d. per ton crushed. Working costs at this mine averaged 24s. 10.9d. per ton crushed.

Although Virginia and Merriespruit have now been safely launched, Middle Wits retains interests which will probably lead to at least three more flotations. Thus, before the company becomes primarily a holding company its shares have a good deal of speculative scope. Furthermore, its substantial holding of Kennecott-Anglovaal Exploration Co. gives it an access to American funds through the Kennecott organization.

Transvaal Gold Mining's First Report after Merger.—Owing to the amalgamation of the Transvaal Gold Mining Estates and Glynn's Lydenburg properties on August 1 last, the results of operations during the calendar year 1950 of Transvaal Gold Mining Estates are not strictly comparable with those of the previous year.

Of the 302,200 tons treated during the year—an increase of 41,900 tons over 1949—14 per cent was contributed by the Glynn's section. However, the average yield per ton declined by 0.65 dwt. to 3.82 dwt., which was due partly to the lower grade of ore mined at the Glynn's section and from the other mines, and partly as the result of the decrease in the pay limit following devaluation. Revenue per ton milled was up 2s. at 48s. 11d., but working costs rose 4s. 1d. to 43s. 8d. The net result was that working profit declined by £16,195 to £79,244. From the £221,627 (£274,697) available, taxation took £9,209 compared with £74,569 in 1949. Dividend payments aggregating 10 per cent (7.5 per cent) on the £852,500 issued capital absorbed £80,875, leaving the carry forward higher at £131,543 compared with £98,203 previously.

Development footage advanced totalled 24,939 ft., of which 4,838 ft. were driven at the Glynn's section during the last five months of the year, an increase of 3,993 ft. Although the ore reserves show a drop of 5,000 tons at 320,400 tons, the average value per ton increased by 0.6 dwt. to 6.5 dwt.

Following the acquisition of the entire undertaking of Glynn's Lydenburg, the issued capital of Transvaal Gold Mining now stands at £852,500 in shares of £1 each, with 147,500 shares in reserve.

During the year the company carried out prospecting for asbestos and while no deposits of economic importance were found, Mr. G. V. R. Richdale, chairman, in his statement accompanying the report and accounts, said that some deposits are awaiting a closer investigation and that a small area on the company's property has been let out on tribute.

Seltrust's Increased Profits.—Seltrust Investment, the investment trust subsidiary company of Selection Trust for the year ended March 31, 1951, showed an increase in gross revenue to £897,148 against £666,963 previously. After providing £430,795 for taxation, net profit of the Company and its subsidiary amounted to £460,938 compared with £348,090. The increase in income was due to the same features which assisted profits of the parent company, Selection Trust, whose activities are reviewed elsewhere in these columns. A dividend payment of 100 per cent on the ordinary shares absorbed a net amount of £357,500 and the sum of £30,937 was required to service the payments on the preference dividend. The carry forward, at the Company's fiscal year-end, totalled £194,214 (£126,087) while those of its wholly owned subsidiary, African Selection Trust (Pty), amounted to £25,323 against £24,074.

Scottish Australian Mining to Make Capital Repayment.—A preliminary statement of the results for the year 1950 of the Scottish Australian Mining Co. discloses that a dividend of 6 per cent, less tax, for the year ended December 31, 1950, payable on July 19, 1951, will be recommended at the annual general meeting of the company to be held on July 6. Net profit for 1950 after all charges, including taxation, amounted to £1,011 (£252). The proposed dividend of 6 per cent (4½ per cent) absorbs a net amount of £1,575.

On May 31, 1951, the company received compensation from the Housing Commission of New South Wales in respect of that part of the Lambton Estate resumed during 1947. The directors have therefore decided that a distribution out of the surplus on this resumption and out of the surpluses available on land sales completed up to December 31 last, shall be made to

stockholders at the rate of 1s. 6d. per 4s. unit of stock. The distribution being out of capital realizations not subject to income tax, will be paid on July 19. The surplus on land sales completed during the year totalled £4,476, which compares with £1,654 in 1949.

Globe and Phoenix Raise Ore Reserves.—Ore crushed at The Globe & Phoenix Gold Mining Co. during 1950 amounted to 72,500 tons, an increase of 400 tons over the previous year. Total gold recovery from all sources amounted to 34,398 oz., a decrease of 2,987 oz. The higher price for gold enabled bullion output to increase by £33,964 to £427,425, but working costs again showed an increase and mine working costs rose from £188,139 to £206,007. This latter figure reflects the increase in production costs per ton to 58s. 0.75d. as compared with 53s. 3.61d. Net profit for the year after providing £116,167 in taxation (£104,390) and an amount of £3,171 (£15,389) for depreciation, was £93,947. The sum of £50,000 against £40,000 was transferred to general reserve. A dividend of 50 per cent (40 per cent) on the £200,000 issued capital in 5s. shares, absorbed a net amount of £55,000, leaving the forward balance lower at £57,338 compared with £68,391 previously.

Total ore reserves as at December 31, 1950 was 180,800 tons having an average value of 18.82 dwt. per ton compared with 148,800 tons of an average value of 18.60 dwt. per ton.

The native labour supply continues to deteriorate and the chairman, Mr. A. Macquisten, states in his address to shareholders that the S. Rhodesian Chamber of Mines is making strong representations to the Government for its immediate intervention to alleviate the acute shortage of native labour.

John Summers' Production Records.—To mark its Centenary year 1950, John Summers & Sons have broken all their former production records. Combined ingot production at Shotton and Shelton was 40,000 tons higher during 1950 at 760,000 tons than in the preceding year. On the hot mill, the company rolled 564,000 tons, almost 100,000 tons more than last year, while 425,000 tons was cold reduced against 350,000 tons in 1949, and deliveries of finished products to customers attained the record figure of 564,000 tons, an increase over the 1949 figure of 100,000 tons.

Gross proceeds of sales and income from investments, etc., was higher by £4,536,945 at £24,070,139. Net profit for the year after making full provision for taxation payable on the profits for 1950, and transferring to the special reserve for deferred taxation the amount of taxation saved by initial allowances on capital expenditure during the year, amounted to £829,415 compared with £934,419 in 1949. The total distribution for the year at 8½ per cent, less tax (same), absorbed £302,940, and £450,000 was placed to reserves. The carry forward at £230,723 compared with £228,496 in 1949.

Correspondence

Bituminous Coal Cleaning in the U.S.A.

Arising out of the article on mechanical cleaning of bituminous coal in the United States by Mr. R. L. Anderson of the U.S. Bureau of Mines, reprinted in *The Mining Journal*, April 6 last, Cyanamid Products, Ltd., write to point out that since this article was written, the use of the heavy media separation process has been greatly extended in the U.S. and that now more than 6,000 tons of bituminous coal are treated by this process every hour, exceeding the total cleaned by any of the other dense media processes.

Corrigenda

Mining Journal Annual Review

We express our regrets alike to our readers and to the companies concerned for two unfortunate errors which occurred in *The Mining Journal* Annual Review, published last month.

Anglo American Corporation's Diamond Interests

In the article on the Anglo American Corporation on page 148, it was stated that the Anglo American Investment Trust held a 75 per cent interest in the 5s. Deferred Ordinary shares of De Beers Consolidated Mines. In point of fact, the Trust holds 3,108,343 Deferred shares out of a total of 16,008,812 shares issued, equivalent to a holding of 19.4 per cent.

Tanjong Tin Dredging's Ore Reserves

In the article on Tanjong Tin Dredging on page 209, it was stated that the ore reserves of the Tanjong and Sungei Luas properties combined were estimated at 105,000 cu. yds. This figure should, of course, have read 105,000,000 cu. yds. As stated in the article, the recoverable tin ore content from this yardage amounts to 24,000 tons.

RAND MINES

Mr. W. H. A. Lawrence, Chairman, presiding at the annual meeting of Rand Mines Ltd., held in Johannesburg on June 1, in the course of his speech said:

The Company has had a successful year, dividend receipts attaining the record figure of just over £1,125,000 and total revenue at over £1,340,000 being one of the highest figures recorded during the 57 years of the Company's existence.

Profit earned by the Company during 1950 and transferred to the Appropriation Account had amounted to £1,112,575, representing an increase of £162,513.

The beneficial effects of devaluation in September, 1949, on the South African gold mining industry were reflected in the results for 1950—the first full year of operations under the changed conditions. Further benefit had been obtained by selling gold at enhanced prices for artistic and industrial purposes. Consequently, although the Witwatersrand gold production had decreased by 28,490 oz. to 11,185,222 oz., revenue had reached the record figure of £141,600,000 and profits had increased by £18,600,000 to £53,700,000, which had also been a record. The major portion of the increase in profits, however, had accrued to the State by way of taxation and lease consideration, which had totalled about £22,600,000 in 1950, an increase of £10,600,000 compared with the previous year. In spite of that the rate of taxation had been increased for 1951. Working costs had continued to rise and were overhauling the advantages of devaluation all too rapidly. Devaluation had resulted in an increase of 75s. 9d. per oz. in the price of gold, but due to the lower grade of ore mined the cost of production per oz. had increased by 6s. 8d. and due to higher operational costs by 26s. 10d., which had represented an overall increase in working costs of 33s. 6d. per oz. during the period September, 1949, to April, 1951.

That rapid whittling down of benefits of devaluation by continually increasing working costs was not only of serious consequence to the producing mines, but also to the new mines which were being opened up on the West Wits line at Klerksdorp and in the Orange Free State. Costs had increased due to many factors, such as improved wages and conditions of employment, the steadily increasing cost of living allowances, higher prices of stores, foodstuffs and power, increased silicosis charges and increased railage charges. The impact of those increasing costs on the gold mining industry was threefold. Production costs were steadily rising, the amount of money tied up in stocks of stores was mounting and the capital cost of bringing a mine to production was outstripping all preconceived ideas.

The Company was, apart from gold mining, largely interested in three other basic industries in South Africa—coal mining, timber and cement.

In the coal mining industry, total production had reached a record level in 1950 under increasingly difficult conditions but, nevertheless, output had been well below capacity in the case of the majority of collieries. In addition to increasing production costs, the main difficulties facing the industry were those of prices and transport. The majority of inland prices were to all intents and purposes frozen at the 1938 levels and the collieries were, therefore, becoming increasingly dependent upon a higher-priced export trade to maintain profitable operations. Some indication of the importance of the export trade could be obtained from the fact that although only 7½ per cent of the output of the Transvaal collieries had been shipped during 1950, more than half the profit earned by those collieries came from that source. In course of mining, coal of various sizes is produced. The large sizes of coal were required principally for export for railways and to a lesser extent by certain industries. The small sizes of coal were consumed mostly by South African power stations and industrial concerns, the demand from which was increasing rapidly and was already out of proportion to the amount of small coal derived from the run of mine production. Inadequate railway, transport and shipping facilities precluded the sale of sufficient large coal to restore the balance and the Transvaal collieries had now to crush coal in order to meet demand for small coal.

It was a fortunate fact that South Africa's basic industries were soundly conditioned and undoubtedly had great potentialities, but those brief observations had, he trusted, made it clear that their progress was being unduly handicapped at the moment by serious restricting influences not least of which was the railway system whose rate of expansion was lagging behind that of the rest of the country. The gold mining industry and, therefore, South Africa generally had already lost much of the benefits gained by devaluation and there were very real dangers of losing all too rapidly what advantages remained. We must, therefore, press for the earliest possible introduction of a more realistic price for gold and for every feasible step being taken to slow down the inflationary spiral of costs.

The Report and Accounts were adopted.

THE CENTRAL PROVINCES MANGANESE ORE COMPANY, LTD.

A SUCCESSFUL YEAR
RECORD PROFITS DUE TO EXCEPTIONAL DEMAND
MR. H. R. HOLMES' SPEECH

The Forty-Third Annual General Meeting of The Central Provinces Manganese Ore Co., Ltd., was held on June 6 at Winchester House, Old Broad Street, London, E.C.2, **Mr. H. R. Holmes** (Chairman and Managing Director) presiding.

Mr. A. Linton, M.C. (director and secretary), read the notice convening the meeting and the report of the auditors.

The Chairman said: Ladies and gentlemen: The report and accounts for the year ended December 31, 1950, have been in your hands for some time, and I propose, with your permission, to take them as read. (Agreed).

Before asking for your approval of the accounts we put before you, I would like to make a few comments on the figures which appear in the balance-sheet and profit and loss account.

From these accounts it will be seen that the company has had a successful year, the profits showing a very considerable increase on those of the previous year.

They constitute a record for this company and are due to the exceptional demand for our ore in the world's markets.

PROFIT AND TAXATION

The profit and loss account for the year shows that the net profit, after providing the very large sum of £1,250,000 for taxation, was £514,971, a considerable increase on the figure of £372,087 for the previous year. The figure of £1,250,000 for taxation is larger than it would have been had it not been for the discontinuance of reciprocal relief in India. Also, as no doubt you are aware, the United Kingdom gives unilateral relief for 1950-51 onwards, but this mitigates only to some extent the adverse effects of the discontinuance of relief in India, and generally the taxation position of the company is somewhat worse now than it was when D.I.T. relief was allowed in both countries. On this occasion I have somewhat enlarged on the question of taxation as it is by far the largest charge in our accounts.

Depreciation of fixed assets is higher at £31,258 as compared with £18,724 for the previous year, and this, of course, is due to the installation of machinery at our mines, to which I have referred in previous years.

Your directors recommend that the sum of £20,000 be placed to the credit of the staff benefit fund. As you are all aware, with taxation at its present level, it is impossible for our staff, both European and Indian, to save sufficiently for retirement, and it is consequently necessary for us to make some provision for this. We feel that we must build up this fund when we can afford to do so, and, as I hope you will agree last year's trading was good, I feel sure that stockholders will approve of the allocation now recommended.

WELFARE OF EMPLOYEES

We have always had the welfare of our labour very much at heart, and we have provided, in the 1950 accounts, a sum sufficient to give those of our labour who qualify for it by service during the year, a cash bonus on similar lines to that drawn by the staff. In addition, we are introducing a contributory provident fund for our workpeople. You will notice from the balance-sheet that the £25,000 contribution made last year to the workers' welfare fund has not as yet been heavily drawn on, though various schemes are being considered in consultation with the representatives of the workers. These are very important matters, and it is most desirable that our relations with labour should remain on the same satisfactory footing as they have been for many years past.

Your directors also recommend that the sum of £150,000 be transferred to the general reserve which will increase it to £300,000. I trust that you will appreciate the prudence of this allocation which is necessary to enable us to provide from our own resources the increased capital expenditure we require in our business, particularly for machinery.

An interim dividend of 1s. per unit, free of tax, was paid on October 2 last, and your directors now recommend a final dividend of 2s. per unit, free of tax. They also recommend a bonus of 6d. per unit free of tax on account of the exceptional trading results for the year. These payments, if approved, will absorb £350,000 as compared with £190,000 for the previous year, leaving a balance of £176,357 to be carried forward to the next account.

BALANCE-SHEET FEATURES

Turning to the balance-sheet, proceeds outstanding on ore sales are £362,484 as compared with £176,527, the increase being due to the larger number of shipments afloat on December 31 than in the previous year.

The only other point on the assets side of the balance-sheet to which I need draw your attention is the increase in British Government securities, tax reserve certificates and cash, which together amount to £2,037,976, against £1,296,792. There is on the other hand a substantial increase in our liabilities (principally taxation) on the other side of the balance sheet.

The figure of £976,269 appearing under reserve for future taxation on the liabilities side of the balance sheet represents taxation on the profits for the year under review less amounts already paid on account in India. The item £206,488 shown lower down under current liabilities as accrued taxation comprises all the tax liability due up to 1950-51.

PROGRAMME OF MECHANIZATION

During the past cold weather, two of your directors, Mr. Bartlett and myself, visited the mines in India, when we made a very thorough examination of the mines and settled several outstanding problems. We still find it impossible to get all the labour we require, and it is in this connection that it is so necessary for us to proceed with our programme of mechanization. As I mentioned last year, the results we had then attained were most encouraging. We have continued with our efforts in this direction which we feel sure will be beneficial to the company, but we are still hampered by delay in the delivery of machinery to which I have referred previously.

Generally speaking, our mines are in very good condition with development work well ahead of ore extraction.

I am pleased to say that our relations with the government authorities are good, and when in India Mr. Bartlett and I took the opportunity of visiting some of the principal ministers of the provincial government, when we were courteously received.

DIAMOND DRILLING

Last year I referred to the diamond drilling at our Balaghat Mine. Further boreholes have been put down which confirm the results of those previously reported. The ore in depth is of excellent quality, and there is no doubt that the manganese ore beds in the Central Provinces, or Madhya Pradesh, as it is now called, extend to a considerable depth, and will be able to give outputs for very many years to come.

The immediate diamond drilling programme at Balaghat Mine is now almost completed, and the plant will be transferred to another of our mines, where information as to the position of the bed in depth is urgently required.

At one of our mines, Dongri Buzurg, we are arranging to instal a heavy media separation plant, which will be used in the first instance to extract the manganese ore from the old dumps. These dumps are considerable in extent and without a plant such as we have ordered, it would be impracticable to extract the ore from them. A lot of this ore will be small in size, and until recently consumers were not willing to take it.

The health of our labour force in India continues to be good, and constant attention is being given to housing, sanitation, water and to the control of malaria.

DEMAND EXCEEDS SUPPLY

The demand for our ore in the world's markets continues to be very strong and is in excess of the amount available.

For some time during the early part of the current year railings of manganese ore were adversely affected by the serious food situation in India, but recently there has been an improvement in the railings position, and I think I may say that the prospects for the current year are satisfactory.

Again I wish to emphasize the excellent work of the staff both in India and in London, and also of our shipping agents in India, Messrs. James Finlay & Co., Ltd. With your permission I will convey the thanks of the stockholders to them for their good work.

I now beg to move: "That the report of the directors and statement of accounts as at December 31, 1950, be and are hereby approved and adopted, and that the profits be appropriated as recommended by the directors." I will ask Major Herring to second the motion, and before putting it to the meeting, I shall be glad to deal with any questions which stockholders may wish to ask.

Major A. C. Herring, V.C., A.C.A., seconded the resolution, which was carried unanimously.

The Board's proposal of a final dividend of 2s. per unit, free of tax, and a bonus of 6d. per unit, free of tax, was also approved.

The retiring director, Mr. A. Linton, M.C., was re-elected and the remuneration of the auditors, Messrs. W. A. Browne & Co., having been fixed, the proceedings terminated with a vote of thanks to the Chairman and Directors of the Company, including the staff and workers.

CROWN MINES

Mr. W. H. A. Lawrence, Chairman, presided at the annual meeting of Crown Mines, Ltd. in Johannesburg on May 30. In the course of his speech said:

Due mainly to the higher price received for gold since devaluation on September 19, 1949, and also to additional income received from sales of gold at enhanced prices for industrial and artistic purposes, the revenue of the gold mining industry in the year 1950 had been the highest ever recorded in the history of gold mining in South Africa.

Monthly working profits of the industry, although also totalling a record amount for the year, had declined seriously as the result of a steady and material increase in working costs. After averaging 26s. 3d. per ton milled for the quarter immediately prior to devaluation, working costs had increased to 28s. 6d. in the last quarter of 1949 to 30s. 5d. in the last quarter of 1950 and to 31s. 1d. in the first quarter of the current year.

Unless that upward trend of working costs could be halted, benefits resulting from devaluation would soon disappear and the industry might again experience the difficult conditions which had prevailed as recently as 21 months ago.

At the Company's mine, revenue for the year had been the highest recorded with the exception of the years 1940 and 1941. Excluding results for the five years immediately prior to devaluation, working profit had, however, been the lowest since 1932.

Considering that the mine had been in production since 1897 and that the average depth of the present main workings was about 8,000 ft. that was not entirely unexpected, but the rate at which and the extent to which working costs had risen since devaluation was causing concern. One of the benefits of the higher price of gold was that it rendered economical the mining of certain ore previously below the pay limit. While the consequent increase in the quantity of ore available made it easier to maintain a high rate of milling and, therefore, to keep the cost per ton milled down, the lower value of ore mined resulted in an increase in the cost per oz. of gold produced depending on the extent of the fall in the grade of ore milled. At the Company's mine, working costs per oz. of gold produced had since devaluation increased by about 29 per cent, of which 9 per cent was due to the decrease in yield. Of the additional revenue of 75s. 9d. an oz. accruing to the Company as a result of devaluation, 44s. 9d. had, therefore, already been absorbed by increased working costs.

Last year, he had explained why it had not been possible to develop sufficient payable ore to replace that mined from reserves and he had stated that the ore reserve tonnage was likely to decline for next two or three years. He had added that thereafter future prospects would be governed by the percentage payability of the Main Reef Leader in unexplored areas below the existing workings due to the improvement in the average and the numbers of both European and non-European employees. During 1950 it had been possible to increase reef development by 23,931 ft. to a total of 72,752 ft. Although there had been a slight decline in the value and percentage of payability of the Main Reef Leader in the central section of the mine, disclosures generally had been satisfactory, particularly in the western section. Including small tonnages again opened up on the Main and South Reefs in the upper levels, total ore developed had been 436,700 tons more than in the previous year, but 386,300 tons less than the tonnage mined from payable reserves. After allowing for certain other adjustments, the available ore reserve at the end of the year had been estimated to be 9,212,000 tons valued at 4.5 dwt. per ton. That represented a decline of 323,000 tons from the previous year's figure, which in all circumstances could be regarded as satisfactory.

As a result of intersection early in 1950 of a strike dyke at depths exceeding 9,000 ft. in the south-eastern portion of the mine, sinking operations had been suspended in R1, 2 and 3 sub-incline shafts pending the outcome of investigations into the extent of intrusion and its effects on reef formation.

In the latter part of 1950, a winze below R.2 incline shaft passed through the dyke which had an apparent thickness of about 500 ft. As the ground to the south of the dyke had been badly broken, the cross-cut had been advanced to less disturbed ground where drilling had been undertaken to establish the position of the reef. In one of those boreholes, a reef, believed to be the Main Reef Leader, had been intersected at a vertical depth of 250 ft. below the cross-cut equal to about 9,500 ft. below the surface assaying 10.4 dwt. over a true width of 18 in. The reef had been thrown down several hundred feet and exploratory operations were continuing to determine more fully the displacement and value of the reef in the area.

During the first four months of the current year, working profit had amounted to £466,369 and additional revenue from sales of gold at enhanced prices to £131,404.

The Report and Accounts were adopted.

ROSE DEEP

Mr. P. H. Anderson, Chairman, moved the adoption of the Annual Report and Accounts at the annual meeting of Rose Deep Ltd. at which he presided in Johannesburg on May 29. The Chairman, in the course of his speech, said:

The Rose Deep Mine, with an area of about 1,119 claims, was one of the smallest mining properties on the Witwatersrand and it was one of the oldest producers, having started milling almost 54 years ago. That the mine was not yet worked out was due to the existence of a large number of payable reefs, with the result that the tonnage of ore per claim was abnormally high. The exceptionally close deposition of these reefs was also a feature of the mine, the zone of mineralization generally being between 20 and 35 ft. in thickness and consisting of several reef bands of a variable width interspersed with quartzite partings. The reef formation consisted of two principal series, the Main Reef and the South Reef, each of which was divided into several distinct horions. At the base was the Main Reef itself with very dark quartite known as black bar above it. The thickness of the Main Reef varied from 1 in. up to about 10 ft. but after it was originally deposited considerable areas appeared to have been altered by flood erosion. In channels and basins washed out by that flood erosion an admixture of the Main Reef and black bar had been re-deposited with the result that in certain areas of the mine separate and diluted reef of up to 9 ft. in thickness, known as bastard reef, was found lying immediately on top of what was left of the Main Reef. The next reef that had been deposited was the Main Reef Leader; that was narrow, varying in thickness from a few inches to a foot, but often carrying high values. Above that lay the South Reef Leader which was often so close to the Main Reef Leader that the two were known as the Combined Reef and were mined together. In portions of the mine up to three separate bands of the South Reef Leader were found; in general, that reef, like the Main Reef Leader, was only a few inches thick and carried good values. Consequently, the Combined Reef had been the greatest gold carrier on the mine and had largely been mined out. The upper portion of the one of mineralization consisted of a series of from one to three lenticular bodies known as top bands of the South Reef varying in thickness up to 10 ft. In addition to those reefs, there were two narrow low-grade ones that were as yet untouched. There was the South Reef which occurred above the main one of enrichment, but as it outcropped north of Rose Deep property and appeared to be only payable down to a vertical depth of about 500 ft., there was probably only a negligible amount of payable ore on that horizon on Rose Deep The other reef, the North Reef, was probably more promising and lay up to 20 ft. below the main zone of enrichment.

From that necessarily brief and sketchy description of the reef structure on Rose Deep, and bearing in mind the number of reefs, the variation between different reefs and the variation within each reef different parts of the mine, it would be appreciated that during the course of 54 years under conditions of fluctuating but generally decreasing pay limits, the mining of that wide zone of enrichment had not been carried out consistently over the whole twenty to thirty-five feet. Only payable zones on each horizon—and therefore higher-grade ones—had been mined from time to time. During the first 34 years of operations, yield had averaged 5.7 dwt. per ton milled, whereas in the last twenty years it had steadily decreased to 2.7 dwt. in 1950.

With the exception of the deeper levels and three recently dewatered areas, namely, Clement, Lohse sub-incline and K.C. (Knights Central) West Areas, ore reserve blocks were scattered over a large proportion of the property and on each of the various reefs. Stoping was taking place in practically all older sections of the mine, but was often complicated by previous workings above and below and was not necessarily confined to ore which had been left behind as unpayable in the past. For some years much time and effort had been spent on locating such lost pay zones, but naturally numbers located were getting fewer and fewer.

Apart from the location of lost pay zones, the main areas on which development of fresh ore depended were at depth and in three dewatered areas. Development had been encouraging in the latter areas which generally had proved to be of a higher value than current reserves.

The quantity of ore remaining to be mined was substantial and prospects at the mine were on the whole encouraging. But he would be failing in his duty if he concluded his remarks without a word of warning. Although, as he pointed out last year, the improvement in the position at Rose Deep was not due entirely to the benefits of devaluation but in a large measure to the vigorous steps that had been taken to overcome previous deficiencies, the mine, nevertheless had benefited considerably from the lowering of the pay limit.

The Report and Accounts were adopted.

CITY DEEP

Mr. W. M. Frames, acting Chairman, presiding at the annual meeting of City Deep Ltd. held in Johannesburg on May 30 in the course of his speech said:

The price received for gold had remained unchanged throughout the year at 248s. 3d. per f.oz. As a result of that higher price and of the greater efficiency and increased tonnage which had been attained since the acquisition of Nourse Mines property, there had been a net increase in the working profit of 4s. 11d. per ton milled, although working costs had risen by 3s. 4d. to 39s. 2d. per ton milled.

In spite of a continued shortage of both European and native labour, ore milled at 1,962,000 tons had represented an increase of 135,000 tons over the figure for 1949, the improvement being mainly accounted for by an increase of 95,038 in the tonnage which had been drawn from surface dumps. Increased revenue received as a result of the higher price of gold had made possible a reduction in the pay limit and there had been a consequent decrease of 0.298 dwt. to 4.269 dwt. in the average yield per ton milled.

Working profit for the period under review, after placing £878 to abnormal costs reserve, had amounted to £1,455,203. To that figure had been added a net credit of £14,185, being the difference between sundry items detailed in the Income and Expenditure Account, making a total profit of £1,469,388, which together with the unappropriated balance of £467,807 brought forward at the beginning of the year and £12,700 withdrawn from shareholders contingency reserve, had made a total of £1,949,895. From that sum appropriations of £562,635 for taxation, £12,748 for forfeited dividends refunded and £709,391 for two dividends of 3s. 6d. each had been made, leaving an unappropriated balance of £665,121.

After allowing for sales of equipment and property totalling £4,647, net capital expenditure during the year including an adjustment of £588 in respect of the cost of the acquisition of Nourse Mines property, had amounted to £92,798. That left capital funds totalling £181,924 to be carried forward to the current year. At the annual meeting last year, shareholders had been informed that capital expenditure during 1950 might amount to £258,000. Due to delays in delivery of equipment and the consequent slowing up of the programme for sinking and equipping the sub-incline shafts, expenditure had been considerably less than anticipated. Much of the equipment and material which was due for delivery during 1950 would, however, become available during the current year and it was now estimated that capital expenditure to be incurred during 1951 mainly on the equipping of the K sub-incline shafts would be of the order of £650,000. Appropriations from profits, together with funds on hand at the end of 1950, should be sufficient to enable the company to meet that heavy capital expenditure from its own resources without necessity for increasing the issued capital. Shareholders must expect, however, that dividends might be on a somewhat lower scale during the next year or two.

Footage developed during the year totalled 59,720 ft., which had represented an increase of 2,548 ft. over the figure for 1949. 24,785 ft. had been sampled, of which 11,925 ft., equivalent to 48.1 per cent, had been classed as payable with an average value of 15.9 dwt. over a channel width of 24 in.

The available ore reserve had been re-estimated as at December 31, 1950, to be 6,012,000 tons averaging 5.8 dwt. over a stoping width of 42.6 in. That was an increase of 35,000 tons compared with the ore reserve at December 31, 1949, the value being lower by 0.1 dwt. and the stoping width 0.6 in. greater. Tonnage contained in the shaft and safety pillars, which was not at present available for stoping, had remained the same at 881,000 tons of an average value of 5.8 dwt.

The basis of gold mining taxation had remained unaltered up to December 31, 1950. Since the close of the year, however, the Minister of Finance had announced the introduction of a revised formula for taxation which was applicable as from January 1, 1951. The new taxation was based as previously on the ratio of profit to recovery and if it had been applied to taxable profits for 1950 it would have had the effect of increasing the taxation payable by the company by about 5 per cent. In addition, tax payable in respect of non-mining revenue had been increased from four shillings in the pound to 4s. 6d. in the pound. Additional revenue received by the Company in respect of sales of gold at enhanced prices had amounted to £84,606 in 1950. During the current year, additional revenue from that source might largely offset the recent increase in taxation, but there was unfortunately, little indication that working costs had yet reached their ceiling.

During the first four months of the current year, working profit had been £334,625 additional revenue from sales of gold at enhanced prices had amounted to £92,006, making a total working profit at £426,631.

The Report and Accounts were adopted.

EAST RAND PROPRIETARY MINES

Mr. W. M. Frames, acting Chairman, presiding at the annual meeting of East Rand, Proprietary Mines Ltd. in Johannesburg on May 30, in the course of his speech said:

The price received for gold had remained unchanged at 248s. 3d. per f.oz. throughout the year. Working costs had increased, however, by 3s. 7d. from 28s. 5d. in 1949 to 32s. in 1950, with the result that the benefits of devaluation had been substantially reduced. In spite of the decrease in the supply of native labour experienced during the latter part of the year, ore milled, at 2,653,000 tons, had been 6,000 tons greater than in the previous year. More extensive mining of ore, which had previously been classed as unpayable and which had been brought within the pay limit as the result of devaluation, had resulted in the average yield per ton milled falling by 0.344 dwt. to 4.027 dwt.

Working profit had amounted to £2,502,816, funds appropriated from profits for capital expenditure had amounted to £537,457, provision for taxation had accounted for £860,829, forfeited dividends refunded had totalled £13,660 and dividends declared during the year had absorbed £945,000.

An application made by the Company to the Mining Leases Board in August, 1949, for undermining rights of an additional area extending over approximately 1,378 claims on the southern boundary of the mine had been revised in April, 1950, as a result of devaluation. The application was still under consideration but, meanwhile, sinking and equipping of five sub-incline shafts, which would eventually extend to the 10,000 ft. horizon in that area, were progressing satisfactorily. Sinking hoists had been installed in each shaft and rock handling facilities had been completed. Sampling in the pilot winzes which were being sunk in the reef above those sub-inclines to provide starting points for longwall stoping had revealed encouraging values over a strike distance of more than 17,000 ft.

A central sub-vertical shaft had been sunk and lined through 1,853 ft. to a depth of 1,868 ft. below the 41st level.

During the first four months of the current year, the shaft had been advanced a further 329 ft. and there now remained approximately 159 ft. to be sunk before it reached its final depth, which would be 2,356 ft.below the 41st level and 175 ft. below the 58th level. The south-east vertical shaft had been sunk 1,609 ft. during the year to a total depth of 2,675 ft. below the collar. During the first four months of the current year, the shaft had been advanced a further 1,200 ft. to a total depth of 3,875 ft., there remaining 2,117 ft. before the final depth of 5,992 ft. was reached.

Capital expenditure to be incurred during the current year was estimated to be of the order of £1,350,000 and he was glad to say that funds on hand, including the unspent balance of last year's capital issue together with further appropriations from profits during the year, should be sufficient to meet that heavy capital expenditure without any serious encroachment on the dividend position.

Shareholders would have noticed that the reports of the Consulting Engineer and General Manager, which had accompanied the Report of the Directors, indicated substantial reductions in development footage accomplished during the year and in the published ore reserves as compared with the corresponding figures for 1949. Those reductions were chiefly the result of a policy curtailing the lateral development in the advance of longwall stope faces in the central area of the mine. Furthermore, he must warn shareholders that that policy was likely to result in a further decline in the available ore reserves during the next few years, despite the fact that such development as had so far been carried out below the 8,000 ft. horizon had given most encouraging results.

Development footage accomplished during the year had totalled 54,340 ft., which was 7,007 ft. less than in the previous year. Payable ore developed had totalled 397,000 tons of an average value of 4.2 dwt. per ton, which was a decrease of 579,800 tons and 0.3 dwt. per ton in value.

The available ore reserve had been re-estimated at December 31, 1950, to be 7,055,000 tons of an average value of 4.8 dwt. over a width of 48.4 in., the tonnage being less by 1,375,000 tons compared with the estimate for 1949.

The basis of gold mining taxation had remained unchanged during 1950. Since the close of the year, however, the Minister of Finance had announced the introduction of a revised formula for taxation which was applicable with effect from the first of January of the current year. New taxation was based as previously on the ratio of profit to recovery. If the new rate had been applied to the year under review, it would have had the effect of increasing taxation payable by the Company by about 5 per cent.

During the first four months of the current year, working profit had been £689,447 and additional revenue from sales of gold at enhanced prices had amounted to £128,591.

The Report and Accounts were adopted.

TRANSVAAL CONSOLIDATED LAND AND EXPLORATION

Mr. Reekie, Chairman, presided at the annual meeting of Transvaal Consolidated Land & Exploration Co., Ltd. held in Johannesburg on May 30. In the course of his speech said:

The total profit for 1950 had been £21,760 lower at £230,530. That sum, together with the balance of £232,217 standing to the credit of the Appropriation Account at the beginning of the year and the transfer of £3,300 from Shareholders Contingency Reserve had given a total of £466,047. Taxation had amounted to £39,071, forfeited dividends refunded to shareholders had amounted to £3,323, a dividend of 1s. 9d. per share declared in December had absorbed £81,396, transfer to Reserve Account had accounted for £147,900, which left at the end of the year an unappropriated balance of £194,357. Share and debenture investments had been taken into the Balance Sheet at a book value of £374,892, which was £540 less than the figure for the previous year. All shares and debentures appeared in the books at or under cost, and in no case above the market price at December 31, 1950. The market price at that date greatly exceeded the book value shown in the Balance Sheet. The holding of shares and debentures constituted one of the Company's principal assets and it would be seen that in the Balance Sheet that item was now more appropriately grouped with the main assets instead of with cash assets as hitherto. Net cash and cash assets at December 31, 1950, after allowing for all current liabilities had totalled £191,300.

The Reserve Account had been increased to £725,000 by the amount of £147,900 transferred from the Appropriation Account, reflecting the investment of funds in the permanent assets of the Company.

At the end of the year, the book value of the Colliery had stood at £790,865 an increase of £39,398.

In 1950, the South African coal trade had a record output due to the further expansion of the inland market and to the improvement over the previous year's export tonnage.

The Company's colliery had continued to produce coal of a high grade and adequate face room existed to meet any probable increase in output. Operations, however, had been restricted due to the shortage of orders during the first quarter of the year and to insufficient railway trucks being available in the last quarter. The latter shortage had been aggravated by difficult transport conditions on the Oogies—Van Dyks Drift railway line. Strong representations had been made by the Transvaal Coal Owners Association to the Railway Administration and to the Department of Commerce and Industries stressing the necessity for immediate action to improve the capacity of that line, which was at present a single track, to handle the increasing output from the new and important area of the coalfield it was called upon to serve.The Railway Administration had recently given an undertaking to double the section of the line from Oogies to Zaaiwater. It was understood that provision for that work had been made in the estimates for the current financial year, but the Association was continuing to press for the line to be doubled the whole way to Van Dyks Drift, as it was felt that congestion was unlikely to be eased to any appreciable extent until that was done. Despite the fact that there was strong demand by the inland market and for the export trade, all collieries were working much below capacity owing to the severe shortage of railway trucks. Consequently, unless adequate rail transport was available to enable industry to increase exports it would be impossible, in view of the increasing costs of production, to maintain the low price of coal at present ruling on the inland market.

The Company held a 45 per cent interest in the Platinum Prospecting Association, Number 3, which had purchased during the year the mineral rights of the remaining extent of Farm Boschkoppie number 685 in the district of Rustenburg. That portion of the farm was to the dip of the area already held by the Association, which now held in addition to certain other properties, the mineral rights of approximately 9,429 acres of Farm Boschkoppie. A drilling programme was at present being carried out on the property to supplement information obtained in prospecting operations many years ago. The programme was not yet completed, but he could state that the results obtained to date from boreholes on the property confirmed the data previously obtained of uniformity of the reef both as regards its width and the satisfactory values it carried.

In his budget speech in March last, the Minister of Finance had announced increases in the rate of taxation which applied to the Company. On the income derived from coal mining operations, the rate had been increased from 4s. to 5s. 6d. in the pound, while the rate on other income, previously 4s. in the pound, had been raised to 4s. 6d.

The Report and Accounts were adopted.

SAN FRANCISCO MINES OF MEXICO

The Thirty-Eighth Annual General Meeting of San Francisco Mines of Mexico, Ltd., was held in London on June 1.

Mr. C. E. Temperley, O.B.E., M.C. (Chairman), presided.

The following is an extract from the statement by the Chairman which was circulated with the report and accounts.

The operating surplus for the year under review was £2,185,000 against £1,910,000 for the previous year, whilst the net profit after taxes was £818,000 against £628,000. The improvement in the figures for the current year results from a somewhat lower level of metal prices being more than offset by the benefits of devaluation of sterling in terms of dollars and by the increased tonnage milled.

During the year under review the mill treated a total of 623,000 tons of ore from the Frisco and Clarines Mines. This is a record annual tonnage and compares with 580,000 tons in the previous year. Although we are now fully equipped to mine and mill at the rate of 720,000 tons a year, this rate of milling has as yet not been reached. Although we are hopeful that the milling rate of 312,000 tons which was achieved during the first half of the current financial year will be exceeded from now on, it will take some time before our operations are firmly established on the full-capacity basis of 720,000 tons a year.

Our underground development amounted to nearly 5,700 metres during the year, which was 500 metres in excess of last year. Drifting exceeded 4,200 metres, of which some 43 per cent was in ore against 41 per cent in 1948/49. Our principal veins, Bronces, Cobriza, Footwall, Frisco, Transvaal and West Brown all continue to contribute their share of ore currently being opened up.

Some 700,000 tons of new sulphide ore were blocked out by development work during the year. After deducting the 600,000 tons mined in the year, this gave a net addition to ore reserves of around 100,000 tons. The reserve now amounts to 4,164,000 tons assaying 6.5 per cent lead, 9.0 per cent zinc, 0.6 per cent copper, 0.7 grammes of gold and 155 grammes of silver—which is equivalent to nearly six years' milling at full capacity.

Over the years there have been frequent observations from this Chair on the question of the burden of taxation which this Company suffers. The burden is to-day greater than ever before and I make no apology for referring to it once again. Mexico levies two onerous taxes based upon revenue irrespective of the profitability of operations and these now take about one-third of our gross revenue. In addition the Company pays Mexican taxes on profits which comprise income tax, which was raised from 30 per cent to 33 per cent at the beginning of 1951, a so-called dividend tax of 8 per cent and an excess profits tax based on a sliding scale formula amounting to 12 per cent on our present rate of earnings but to 25 per cent for any further increase. These three taxes on profits combine into a levy about 45 per cent of present earnings.

The Mexican taxes on revenue and the taxes on profits thus currently aggregate about two-thirds of our earnings.

British taxation will be familiar to you. At present rates, with income tax at 47½ per cent and profits tax at 10 per cent on undistributed profits and at 50 per cent on distributed profits (less Unilateral Relief against Mexican taxes granted for the first time last year, equal to half the above taxes) and assuming, for example, that about half of the available net earnings are distributed, the overall British taxes amount to about 40 per cent of our earnings after Mexican taxes.

The base metal market and prices are as confusing as they are artificial. During most of 1949 and for the first half of 1950, supply generally exceeded demand, which led both to an accumulation of metals in producers' hands and to a depressed price level. The conflict in Korea reversed the situation. U.S. Government stockpiling was accelerated, heavy demands for base metals for rearmament arose everywhere and these demands were superimposed upon a rising U.S. civilian consumer demand which was, for the most part, not curbed until 1951. As a consequence the price of base metals recovered sharply; from a low of 10.5c. in March, 1950 lead moved to 17c. New York basis at the year-end, whilst zinc moved from a low of 9.75c. to 17.5c. E. St. Louis basis. In January, 1951 the U.S.A. froze the prices of lead and zinc at these levels but substantial premiums are currently obtainable for sales outside the U.S.A. At the present moment the paradoxical situation exists in which the U.S.A. is unable to import its full requirements because its frozen price level is below prices ruling elsewhere, while in the case of lead the U.S.A. import duty, doubled as from the beginning of 1951, further accentuates the price differential. It is the consensus of opinion that this anomalous situation will be corrected before long, either by an upward adjustment of the present frozen price levels or by suspending the import duties, or both. Meanwhile, the recovery of prices to around the top levels of 1948 has had a favourable effect upon our earnings.

The Report and Accounts were adopted.

BRITISH-BORNEO PETROLEUM SYNDICATE

The Thirty-Seventh Annual General Meeting of the British-Borneo Petroleum Syndicate Ltd. was held in London on June 5, **Mr. Malcolm Maclachlan** (Chairman and Managing Director), presiding.

The Chairman, in the course of his speech, said:

The Profit and Loss Account shows that the revenue for the year, dividends from our investments, and profits on sales of securities, amounted to £257,251. Office expenses and directors' emolument were £8,773, leaving a net profit for the year of £248,478. In the appropriation account this profit is added to the £33,262 of unappropriated profits brought forward from the previous year.

We now recommend the payment in respect of the year to March 31 last of a dividend of 1s. per stock unit free of income tax.

In addition, the directors recommend that £40,001 of the company's general reserve, together with the capital reserve of £9,997 be capitalized and applied in full payment of 166,660 units of stock of 6s. each and that these be distributed to the stockholders in the proportion of one fully paid new unit for every five units which are now held.

I desire to point out that, while the directors have no intention of attempting to set a valuation on the Brunei royalty, the amount of new capital to be distributed will approximately restore the capital which was written off in respect of that interest in 1932.

The profit for the year constitutes a record and I am sure it will be agreed that it is satisfactory that we have been able to recommend a further increase in dividend, to make a share distribution, and also to strengthen our reserve position.

At the same time, the greater part of the increase in the profits for the year has been absorbed by taxation and we shall now pay to the State approximately £3 8s. 3d. for every £1 which is received by the owners of the business.

The burden of taxation is well known and is unlikely to be lessened as long as present policies are continued. I do however, desire to draw special attention to the extent to which British enterprises operating mineral concessions overseas are placed at a disadvantage with their foreign competitors, not only by the existing scale of British taxation, but by the narrow and rigid treatment under the British tax code of such matters as depletion allowances and the taxation of profits earned overseas.

One result is that companies operating under the American tax code, with its more flexible definition of profit, are able to couch their offers to the owners of mineral rights in more attractive formulae. It should, however, be appreciated that the result is not necessarily a higher revenue to the owners of mineral rights, and that in a number of cases British companies, operating under arrangements less attractively publicized, in fact pay at least as great a proportion of the gross value of the mineral which is extracted.

It is becoming essential that the tax authorities here should endeavour to reshape the form of the British tax code and reduce its severity so as to place British enterprises on more level terms with their overseas competitors.

Members will recollect that our oil interests in British Borneo consist of the right to receive a royalty on all oil production in the State of Brunei by the British Malayan Petroleum Co., a member of the Shell Group, and also on any oil production which that Group may obtain from the Klias Peninsula in British North Borneo.

During the year the active production programme of the British Malayan Co. in its Seria field in Brunei has continued. The royalty which we have received has shown a further considerable increase and has made the principal contribution to the increased profit for the year under review.

The operations of Apex (Trinidad) Oilfields continue to be successful. The oil production of Ultramar Co., Ltd., in which we have a moderate investment, has shown a steady improvement over recent months and that company has commenced repayment of its indebtedness to the Finance Corporation for Industry.

In addition to our substantial interests in the oil industry, we have a number of general investments. The following is an analysis of our investments which have Stock Exchange quotations, based upon the Stock Exchange valuation at the date of our balance sheet. Oil shares 57 per cent, Mining Finance and Mining Companies 30 per cent, Home Industrials 7 per cent, National Boards and Corporation Stocks 3 per cent, American Securities 2 per cent and Rubber and Tea shares 1 per cent. The Stock Exchange value of these investments is substantially in excess of the amount at which they are included in the balance sheet.

The Report and Accounts were unanimously adopted and resolutions passed approving new Articles of Association and a bonus issue of stock to existing stockholders.

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(Incorporated in the Union of South Africa)

ABRIDGED REPORT OF THE DIRECTORS FOR THE YEAR ENDED DECEMBER 31, 1950

The profit for the year under review after providing for taxation was £2,339,780 as compared with £2,885,896 for the year 1949.

The Corporation's interests consist mainly of shares in mining finance and investment companies, in mining companies and, to a lesser extent, in industrial companies.

TYPE AND NAME OF COMPANY

FINANCE AND INVESTMENT.—African and European Investment Co. Ltd. **Anglo American Investment Trust Ltd.** Central Mining Free States Areas Ltd. **The New Era Consolidated Ltd. Orange Free State Investment Trust Ltd. Rand Selection Corporation Ltd.** Rhodesian Anglo American Ltd. **South African Mines Selection Ltd. South African Townships, Mining and Finance Corporation Ltd. West Rand Investment Trust Ltd.**

GOLD (PRODUCING).—Brakpan Mines Ltd. Daggafontein Mines Ltd. East Daggafontein Mines Ltd. Grootvlei Proprietary Mines Ltd. Rand Leases (Vogelstruisfontein) Gold Mining Co. Ltd. **The South African Land and Exploration Co. Ltd. Springs Mines Ltd.** Vlakfontein Gold Mining Co. Ltd.

GOLD (PROSPECTING AND DEVELOPING).—Freddies North Lease Area Ltd. Freddies South Lease Area Ltd. **Free State Geduld Mines Ltd. Loraine Gold Mines Ltd. President Brand Gold Mining Co. Ltd. President Steyn Gold Mining Co. Ltd. Vaal Reefs Exploration and Mining Co. Ltd. Welkom Gold Mining Co. Ltd. Western Holdings Ltd. Western Ultra Deep Levels Ltd.** Withok Proprietary Co. Ltd. Witwatersrand Deep Ltd.

BASE METALS.—Mufulira Copper Mines Ltd. Munnik Myburgh Chrysotile Asbestos Ltd. Nchanga Consolidated Copper Mines Ltd. The Rhodesia Broken Hill Development Co. Ltd.

COAL.—*Transvaal Coal Corporation Ltd.

INDUSTRIAL AND SUNDRY.—African Cables Ltd. American Anglo-Transvaal Investment Corporation Ltd. **Anglo American Prospecting Co. Ltd. *Anmercosa Land and Estates Ltd.** East Rand Engineering Co. Ltd. Eriksen Consolidated Holdings Ltd. **First Electric Corporation of South Africa Ltd. Hard Metals Ltd.** Industex Ltd. James Thompson Ltd. National Finance Corporation of South Africa. New Monteleo Ltd. **Orange Free State Land and Estate Co (Proprietary) Ltd.** Rhodesian Alloys Ltd. Tanganyika Concessions Ltd. Tiger Oats and National Milling Co. Ltd. ***Zinc Products Ltd.**

*Subsidiary Company.

Finance and Investment Companies:

THE NEW ERA CONSOLIDATED LTD.—The Company's principal interests are represented by its shareholdings in the gold, copper and diamond mining concerns of the Anglo American Group.

The profit for the year 1950 amounted to £151,661 as compared with £176,906 for the previous year.

RAND SELECTION CORPORATION LTD.—The profit earned for the year ended September 30, 1950, was £625,643 as compared with £537,283 for the preceding year.

SOUTH AFRICAN MINES SELECTION LTD.—The Company's principal shareholdings are in: African and European Investment Co. Ltd. Blesbok Colliery Ltd. De Beers Industrial Corporation Ltd. Free State Geduld Mines Ltd. *Free State Mines Selection Ltd. (wholly owned subsidiary). Loraine Gold Mines Ltd. Munnik Myburgh Chrysotile Asbestos Ltd. Natal Anthracite Colliery Ltd. New Monteleo Ltd. Orange Free State Land and Estate Co. (Proprietary) Ltd. President Brand Gold Mining Co. Ltd. President Steyn Gold Mining Co. Ltd. Vierfaniein Colliery (Proprietary) Ltd. Weikom Gold Mining Co. Ltd. Western Holdings Ltd.

AFRICAN & EUROPEAN INVESTMENT CO. LTD.—This Company originally prospected the famous Block 7 area, in the Orange Free State, and holds large interests in the three companies formed to undertake mining operations in that area, viz:—Welkom Gold Mining Co. Ltd, President Steyn Gold Mining Co. Ltd., and President Brand Gold Mining Co. Ltd.

The profit of the African and European Investment Co. Ltd., for 1950, was £668,620 as compared with £874,559 for the previous year.

Producing Gold Mines:

Compared with 1949, the tonnage milled by the mines of the Group increased by 925,500 to 9,990,000 tons, the revenue per ton was 9s. 1d. more, and working costs were 1s. 6d. per ton higher. The total working profit at £11,539,000 was over £4,500,000 greater. The amount paid in dividends was increased by £2,110,000 to £5,216,000 and the amount paid in lease payments and taxation to the Government at £5,799,000 increased by £2,662,000.

West Rand Interests.—The Corporation's interests in the Far West Rand are maintained primarily through its substantial shareholdings in: WEST RAND INVESTMENT TRUST LTD.

Orange Free State Interests.—The Anglo American Corporation's interests in the Orange Free State are maintained through direct holdings in many of the mining and other companies, but principally through African & European Investment Co. Ltd., Orange Free State Investment Trust Ltd., and South African Mines Selection Ltd.

The opening up of this Goldfield has been a major undertaking and has called for great technical skill and resourcefulness. The first mine is likely to reach production this year.

The following is a resume of the activities of some of the companies in which Orange Free State Investment Trust Ltd., is largely interested. The companies referred to are administered by the Corporation.

LORAINE GOLD MINES LTD.—This Company was registered on November 10, 1950, with the main object of taking cession of and exploiting for its own benefit the mining lease granted to Wit. Extensions Ltd., in respect of the Western portion of the Wit. Extensions block of farms north of Odendaalsrus.

PRESIDENT BRAND GOLD MINING CO. LTD.—Considerable progress was made during the year on the Company's property in the installation of plant and equipment and in shaft sinking.

PRESIDENT STEYN GOLD MINING CO. LTD.—Good progress was made in shaft sinking at both shafts of the Company's mine during the year.

WELKOM GOLD MINING CO. LTD.—During the year 1950 both shafts intersected the Basal Reef and shaft sinking operations were stopped below the Reef horizon. The shafts were equipped and development operations started soon after the middle of the year.

Up to the end of March, 1951, a total of 23,056 ft. of development had been completed from both shafts; of this 1,316 ft. was driven on Reef and 750 ft., or 59.06 per cent, was payable, giving an average assay value of 44.63 dwt. over an average width of 8.81 in., equivalent to 393 in.-dwt.

Provided the present rate of progress is maintained the connection between the two shafts will be made in about August, 1951, and if nothing unforeseen happens, production will start this year.

Diamond Interests.—The Corporation maintains its interest in the diamond business through a large shareholding in: ANGLO AMERICAN INVESTMENT TRUST LTD.

The Company made a profit for the year 1950 of approximately £1,718,000 after providing for taxation, and dividends declared were increased by 1s. per share, totalling 7s. per share.

RHODESIAN ANGLO AMERICAN LTD.—The profit for the year was £2,010,948 as against £1,458,995 for the year ended June 30, 1949. Dividends totalled 3s. 3d. per unit of stock (less British Income Tax).

RHOKANA CORPORATION LTD.—The profit for the year ended June 30, 1950, increased from £5,425,175 to £6,687,165. Dividends totalled 24s. per unit of Ordinary and "A" Stock (less British Income Tax).

Copper production increased from 74,982 l.tons for the year ended June 30, 1949, to 80,540 l.tons for the year ended June 30, 1950.

NCHANGA CONSOLIDATED COPPER MINES LTD.—Production for the year ended March 31, 1950, was 38,761 l.tons of copper (as against 32,876 l.tons for the previous year). The profit for the year was £1,531,310 against £1,609,924 for the year ended March 31, 1949, and the Company declared a maiden dividend of 20 per cent for the year (less British Income Tax).

RHODESIA COPPER REFINERIES LTD.—The extensions to the Refinery are now approaching completion, and these will be available to handle a proportion of the increased output from Nchanga.

THE RHODESIA BROKEN HILL DEVELOPMENT CO. LTD.—Production figures in l.tons are as follows: Zinc 22,715, Lead 13,685, Fused Vanadium Oxide *Nil*.

A new section of the Lead Smelter Plant, by means of which it is hoped to increase the production of lead to approximately 1,500 l.tons per month, is expected to be completed towards the end of 1951. Extensions to the Zinc Plant, to increase zinc production to approximately 2,150 l.tons per month, are also under construction.

Copies of the full report and accounts (which are to be submitted at the Thirty-fourth Annual General Meeting to be held in Johannesburg on Friday, June 22, 1951, at 11 a.m.), may be obtained at the London office of the Corporation, 11 Old Jewry, E.C.2.

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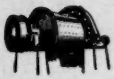

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